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Notified in AAOs for 30th November, 1969

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AUSTRALIAN MILITARY FORCES

SIGNAL TRAINING

(ALL ARMS)

PAMPHLET No 7

RADIOTELEPHONE PROCEDURE

1969

This Pamphlet supersedes the following publications:

a. *Signal Training (All Arms), Pamphlet No 7, Voice Procedure (1963).*

b. *Signal Training (All Arms), Pamphlet No 7, Radiotelephone Procedure (Provisional) (1968).*

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AUSTRALIAN ARMY

SIGNAL TRAINING

(ALL ARMS)

PAMPHLET No 7

RADIOTELEPHONE PROCEDURE

1969

AMENDMENT LIST No 1

Army Headquarters
CANBERRA ACT

Prepared and issued under the direction of the Chief of the General Staff.

Serial	*Amendment Action*
1.	Page XIII. 'Callsign'. Line 1. Correct spelling of 'pronounceable'.
2.	Page 8-10. Note 1. Line 2. Delete 'conversion'. Insert 'conversation'.
3.	Cancel Pages VII, VIII, IX, X, 1-5, 1-6, 2-1, 2-2, 2-15, 2-16, 2A1-1 to 2A1-6, 2A2-1 to 2A2-8, 2A4-1, 2A4-2, 3-5 to 3-10, 3-15 to 3-20, 4-11 to 4-16, 4-19, 4-20, 6-9 to 6-22, 7-1 and 7-2.
4.	Insert Pages VII, VIII, 1-5, 1-6, 2-1, 2-2, 2-15, 2-16, 2A1-1 to 2A1-6, 2A2-1 to 2A2-6, 2A4-1, 2A4-2, 3-5 to 3-10, 3-15 to 3-20, 4-11 to 4-16, 4-19, 4-20, 6-9 to 6-24, 7-1 and 7-2.
5.	Complete Amendment Certificate.

Signal Training (All Arms) Pamphlet No 7, Radiotelephone Procedure

AMENDMENT CERTIFICATE

1. Proposals for amendment or additions to the text of this Pamphlet should be made through normal channels to Army Headquarters (Directorate of Military Training).

2. Certified that the amendments promulgated in the undermentioned Amendment List have been made in this Pamphlet.

Amendment List		*Amendment Made By*	*Date*
No	*Date*		

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V

SIGNAL TRAINING

(ALL ARMS)

PAMPHLET No 7

RADIOTELEPHONE PROCEDURE

1969

PREFACE

1. The aim of this Pamphlet is to detail the radiotelephone procedure to be used throughout the AMF.

2. The procedures contained in the Pamphlet are based on Allied Communications Publication (ACP) 125. Some minor changes have been made to cater for special AMF equipments and conditions. Certain procedures, not included in ACP 125, have been incorporated in the Pamphlet; these include procedures for:

a. closing down,

b. delegating and assuming control,

c. retransmission (rebroadcast),

d. joining a working net,

e. long messages, and

f. changing frequency.

SIGNAL TRAINING

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DEFINITIONS

Address Group. See Chapter 2, Sub-paragraph 206. d.

Address Indicating Group (AIG). An address group which represents a specific set of action and/or information addresses.

Addressee. The individual, unit, formation, etc, to whom a message is directed by the originator. Addressees may be indicated as either ACTION or INFORMATION.

Authentication. A security measure designed to protect a communication system against fraudulent transmissions (see Paragraph 122).

Call. A transmission made for the purpose of identifying the transmitting station and station(s) for which the transmission is intended.

Callsign. Any combination of characters or pronouncable words which identifies a communication facility, a command, an authority, an activity or a unit; used primarily for establishing and maintaining communications.

Code Word. See Chapter 1, Sub-paragraph 118. a.

Codress Message. A type of message in which the entire address is contained in the encrypted text.

Copy (Radio Communication). To maintain a continuous receiver watch keeping a complete log.

Date-Time Group (DTG). The date and time, expressed in digits and zone suffix, at which the message was prepared for transmission. It is expressed as six digits followed by the zone suffix. The first pair of digits denoting the date, second pair the hours, third pair the minutes.

Decode. To convert an encoded message into its equivalent plain text.

Decrypt (or Decipher). To convert a cryptogram (cipher text) into plain text by reversal of the encryption process. This does not include solution by cryptanalysis.

Derived Callsign. See Fixed Callsign.

Drafter. A person who actually composes a message for release by the originator or the releasing officer.

Electronic Counter Measures (ECM). That major subdivision of electronic warfare involving actions taken to prevent or reduce the effectiveness of enemy equipment and tactics employing or affected by electro-magnetic radiations and to exploit the enemy's use of such radiations.

Electronic Silence. A period during which all or certain equipments, which are capable of electro-magnetic radiation, are kept inoperative. Equipments that may be affected include:

a. communication equipment,

b. radars and surveillance devices,

c. infra-red and electronic counter measure equipment, and

d. beacons.

Electronic Warfare (EW). That division of the military use of electronics involving actions taken to prevent or reduce an enemy's effective use of radiated electro-magnetic energy and actions taken to insure our own effective use of radiated electro-magnetic energy.

Encipher (or Encrypt). To convert a plain text message into unintelligible language by means of a cipher (crypto) system.

Encode. To convert a plain text message into its coded form.

Ending. The part of a message containing all components following the text.

Ending Sign. See Chapter 2, Sub-paragraph 216. e.

Fixed Callsign. See Chapter 2, Paragraph 212.

Fixed Figure Suffix. See Fixed Callsign.

Frequency Designator. Used to identify frequencies in order to facilitate ready reference and to achieve low level security cover. A frequency designator is a random group normally comprising a letter and two or three figures, for example, P24 or R136. They are promulgated in Signal Operation Instructions.

Guard (Radio Communication). To maintain a continuous receiver watch with transmitter ready for immediate use.

Link. A general term used to indicate the existence of communications facilities between two points.

Listening Watch. A continuous receiver watch established for the reception of traffic addressed to, or of interest to, own unit with complete log optional.

MAYDAY. An international (distress) signal which indicates that a ship, aircraft, or other vehicle is threatened by grave and imminent danger and requests immediate assistance.

Message. Any thought or idea expressed briefly in plain or secret language prepared in a form suitable for transmission by any means of communication.

Message Centre. A communication agency (normally part of a communications centre) charged with the responsibility for acceptance, preparation for transmission, receipt and delivery of messages.

Net Control Station. A station designated to control traffic and enforce circuit discipline within a given net.

Nicknames (Exercise). Nicknames may be assigned formally or informally by an appropriate authority to an event, project, manoeuvre, exercise test, or other activity for purposes other than to provide for the security of information. Nicknames will always consist of at least two separate words and should be short. Their most common use is for naming manoeuvres and exercises.

Operating Signals. These may be 'Q' or 'Z' signals and are three letter groups which are assigned specific international meanings. 'Q' and 'Z' signals are authorized for use in allied military operations in lieu of the respective prowords, when necessary because of language difficulties or poor conditions (see Annex B to Chapter 4).

Operator. The person who is responsible for the efficient operation of a radio or other communications electronic equipment.

Operator's Log. A chronological record of events relating to the operation of a particular circuit.

Originator. The command by whose authority a message is sent. The responsibility of the originator includes the responsibility for the functions of the drafter and releasing officer.

PAN. An international (urgency) signal which indicates that the calling station has a very urgent message to transmit concerning the safety of a ship, aircraft, or other vehicle, or the safety of a person.

Plaindress. A type of message in which the originator and addressee designators are indicated externally of the text.

Precedence. A designation assigned to a message by the originator to indicate to communication personnel the relative order of handling and to the addressee the order in which the message is to be noted.

Prosign (Procedure Sign). A prosign is the morse code equivalent of a proword (see Annex B to Chapter 4).

Radio Net. See Chapter 2, Paragraph 201.

Radio Silence. A period during which all or certain radio equipment capable of radiation is kept inoperative. (Frequency bands and/or types of equipment affected are normally specified.)

Reception. Listening to, copying, recording or viewing any form of emission.

Releasing Officer. A properly designated individual who may authorize the sending of a message for and in the name of the originator.

SECURITE. An international (safety) signal which indicates that the station is about to transmit a message concerning the safety of navigation or giving important meteorological warnings.

Service Message. See Chapter 6, Paragraph 605.

Signal. a. As applied to electronics, any transmitted electrical impulse.

b. Operationally, a type of message, the text of which consists of one or more letters, words, characters, signal flags, visual displays or special sounds, with pre-arranged meanings, and which is conveyed or transmitted by visual, acoustical or electrical means.

Signal Operation Instructions (SOIs). Contain frequently changing information of interest to operators and users of communication systems. SOIs include current callsigns, frequency assignments (including frequency designators) address groups and voice codes. SOIs are issued at unit level although this information is often included in operation orders.

Standing Operating Procedures (SOPs). A set of instructions covering those features of operations which lend themselves to be definite or standardized procedures without loss of effectiveness. The procedure is applicable unless prescribed otherwise in a particular case. Thus, the flexibility necessary in special situations is retained.

Standing Signal Instructions (SSIs). Relate to communication matters of a relatively permanent nature such as the procedure for reporting interference, lost contact drill, types of codes in use, etc. SSIs are not normally issued below formation level and units incorporate this information in their SOPs.

Substation. Stations on a radio net other than the NCS.

Text. That part of a message which contains the thought or idea which the originator desires to be communicated.

User. The person for whom radio, or other communications-electronic equipment, is provided as a means of passing intelligence.

SIGNAL TRAINING

(ALL ARMS)

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1969

CHAPTER 1

GENERAL

RADIOTELEPHONE PROCEDURE — WHY IT IS NECESSARY

Reasons for Procedure

101. We learn and use Radiotelephone Procedure because:

a. every word we say on a radio set can be heard by the enemy;

b. even the best radio communications may suffer from interference, which can result in misunderstood messages; and

c. with most radio systems, if two people on the same net send at once, the result is chaos. Clearly, some form of discipline is needed.

102. Procedure is therefore a set of rules designed to provide:

a. security,

b. accuracy, and

c. discipline.

SECURITY

General

103. In the interest of security, transmissions by radiotelephone are to be as short and concise as possible, consistent with clarity. Since personnel other than trained operators frequently use radiotelephone equipment, all personnel must be aware that transmissions by radiotelephone are subject to enemy interception and, therefore, have no security.

104. Adherence to prescribed procedures is mandatory. Unauthorized departures from, or variations to, prescribed procedures invariably create confusion, reduce reliability and speed, and tend to nullify

security precautions. If the procedures prescribed do not cover a specific operating requirement, initiative and common sense should suffice, provided the principles set out in this Pamphlet are observed.

Security Rules

105. The following basic rules are essential for transmission security and are to be strictly enforced on all military radiotelephone nets:

a. No transmission is to be made which has not been authorized by proper authority.

b. The following practices are forbidden:

(1) violation of radio silence, except where specifically authorized;

(2) unofficial conversations or messages between operators;

(3) transmitting in a directed net without permission;

(4) unnecessary tuning and testing calls;

(5) transmitting the operator's personal sign or name;

(6) unauthorized use of plain language;

(7) use of other than authorized prowords;

(8) unauthorized use of plain language in place of applicable prowords, prosigns or operating signals;

(9) linkage or compromise of classified callsigns and address groups by plain language disclosures, or association with unclassified callsigns;

(10) use of profane or obscene language.

(11) use of excessive transmitting power;

(12) excessive time taken in tuning, changing frequency, or adjusting equipment; and

(13) transmitting at speeds beyond the capabilities of receiving operators.

Radio Interception

106. The chances of the enemy hearing our radio transmissions are excellent. Indeed, it must be assumed that every word is being taken down and may well be used in evidence against us. It is no secret that all the major powers employ a large number of experts engaged in intercepting radio transmissions.

107. Basically, two types of information are obtained by interception. These may be classified as 'Long Term' and 'Short Term'.

Long Term Information

108. Long term information is given away by direct or indirect breaches of security:

a. Direct breaches of security are concerned with orders of battle, moves of formations, and future intentions. To prevent intelligence of this nature reaching the enemy, the names of units or formations are never to be mentioned, nor for that matter should any clue be given as to their nature, composition or employment. This Pamphlet contains a number of devices employed to keep information from the enemy, such as callsigns, address groups and codes. The aim of the majority of these devices is to avoid identification of a unit, or formation, by associating it with any particular feature or personality. Great care must be taken to avoid discussing moves, either past, present or future. This type of information is perhaps, the most useful of all to an enemy intelligence organization.

b. Indirect breaches of security are more difficult to define. The central feature of any intercept organization is a very comprehensive filing system. In it is recorded a great deal of information about officers' and soldiers' peculiarities and special operating techniques, such as those illustrated in the following examples:

(1) Example 1:
The operator or user who does not think about what he is going to say before speaking and consequently begins each sentence with 'ah'.

(2) Example 2:
The operator or user who persists in saying 'Sex' when he means 'Six'.

109. The peculiarities illustrated in Examples 1 and 2 are, in themselves, quite harmless. However, idiosyncrasies are to the intercept operator as finger prints are to the policeman. The information which can be obtained from a central filing system is more comprehensive than just finger printing. The individual pieces of a jigsaw puzzle are meaningless. However, collect all the pieces together, assemble them correctly, and you have a picture. Individual radio transmissions, each of which in themselves appear harmless, may form a clear picture when put together at an intelligence agency.

Short Term Information

110. Short term information may be defined as information sent during the actual battle, the possession of which will give the enemy an advantage.

111. Here we have a constant tug-of-war between the requirements of security on the one hand, and considerations of speed and what is in fact feasible on the other. We must somehow strike the correct balance between the two seemingly incompatible features, security and speed.

112. If the enemy is in a well prepared defensive position, with a highly developed communication network, and a well prepared artillery plan, then reaction will be swifter than may be expected during fluid operations.

113. Only the expert can really decide what the enemy reaction time will be in any given set of circumstances. However, the ordinary user must have some general guide or he may give the whole thing up as a bad job and send everything in clear. Here then is a simple rule for forward units:

> 'It must be assumed that anything transmitted in clear will immediately become known to the enemy; anyone deciding to transmit in clear must accept this risk. Whether the enemy, having obtained the information, is likely to have sufficient time to take effective counter action can only be assessed on the spot in the light of the tactical situation.'

114. Obviously, such a rule cannot cover all situations, but, if sensibly applied, it will cover most.

115. It should now be possible to see some pattern in this confusing business. For example, it may be safe to say 'I am moving to the Red Barn now' provided you do not remain at the Red Barn for more than, in the worst case, half an hour. It will never be safe to say, 'I am moving to the Red Barn in six hours time'. It should be perfectly safe for infantry in armoured personnel carriers to give orders in clear over the radio, provided they are acted upon quickly. On the other hand, there will be no rest for the commander who gives harbouring instructions in clear.

Conclusions

116. From the above information the following conclusions can be drawn:

a. Long term and short term security are two different problems.

b. Everything possible must be done to ensure that long term intelligence, such as order of battle and future plans, is denied to the enemy.

c. There can be no compromise over long term security. If it is a long term matter then use alternative means of communication. Given time any code can be broken, so do not use the radio.

d. Short term security is concerned with matters relating to operations already under way. Here the commander must weigh speed against security.

e. The message must get to our own troops in time for them to act on it. It is a calculated risk, but, with success and the lives of men at stake, each transmission must be treated on its own merits. To strike the right balance between the rival claims of security and speed is a commander's responsibility.

117. Reasons why some users of radiotelephones are careless about security are as follows:

a. Attaining good security requires much more thought and effort than taking the easy way, which is to send in clear and claim later, if challenged, that speed overruled the security requirement.

b. The careless user knows that breaches are often undetected and, even if disclosed, there is a good chance that they can be explained away on grounds of assumed urgency at the time.

c. It is most exceptional for a careless user of the radiotelephone to ever become aware of the consequences of his action, because the enemy never reveals the source of his information. The careless user, if unchecked, tends to grow more careless. He does not appreciate that his actions may have caused Australian casualties because it is rarely possible to link a breach of security with a particular enemy action.

Additional Aids to Security

118. **Code Words and Nicknames.** The use of a code word or nickname provides the following security cover:

a. A code word is a classified word which conveys a classified meaning, other than its conventional one, pre-arranged by using agencies.

b. A nickname consists of two separate words and may be chosen at random. A nickname may be used for:

(1) convenience, for example, BOWLER HAT instead of SAIGON;

(2) provision of low grade security cover for reference to geographical locations in certain circumstances; or

(3) substitution of prowords in clear in the procedures for closing down, radio silence (other than emergency silence) and changing frequency. When used in these procedures, nicknames must be used once only.

119. Detailed rules for the use of code words and nicknames are contained in the *Joint Services Staff Manual, Service Writing [JSP (AS) 102] and Staff Duties (Australia).*

120. **Radiotelephone Codes.** Only those codes which are officially authorized are to be used. Current authorized AMF codes are as follows:

a. *Operations Code.* A short term security code used for encoding complete texts of messages containing classified information. Separate editions are published for operations, exercises and class-room training.

b. *Numeral Code.* A short term security code for use when only numeral portions of a message, such as grid references and times, need to be encoded. Separate editions are published for operations, exercises and class-room training. Instructions for its use are contained in each edition.

c. *Authentication Table.* The current authentication table in use in the AMF allows for challenge and reply authentications. THE TABLE MUST NOT BE USED FOR SELF-AUTHENTICATION. Full instructions for use are issued with the table.

121. Details of codes and authentication tables to be used in Joint or Combined operations must be obtained prior to commencement of operations. Operators and users must then be practised in their use before communications are established.

122. **Authentication.** Modern intercept techniques facilitate enemy infiltration of radiotelephone nets and other communication systems for the purpose of transmitting messages designed to glean intelligence, or to cause confusion. Authentication is a device used to counter such techniques and should be used as often as is practical, especially when a transmission is suspect. Authentication should always be used on receipt of messages ordering, or requesting, changes of frequency, or radio silence, unless code words or nicknames are used (see Chapter 5).

123. **Callsigns and Address Groups.** For definitions and uses see Chapter 2, Paragraph 206.

124. **Veiled Speech.** This may be defined as the art of referring to the future by reference to the past. In essence, it consists of reference to events of which the enemy would have no knowledge; for example, 'Meet me at the same time and the same place as yesterday'. Veiled speech is useful provided it is not overdone.

Jargon

125. Jargon includes unofficial and clumsy references to persons, units and equipment; for example, 'tin cans' for tanks, 'birdmen' for paratroops. There is no security value in such measures and they serve only to 'label' the unit or formation using them.

Net Security Measures

126. Net Security Measures are those actions taken to prevent the enemy EW organization mounting both passive and active ECM against our radio communications.

127. Net Security Measures are detailed in formation SSIs and repeated as necessary in unit SOPs. They include the procedures for:

a. loss of contact,
b. failing to answer,
c. collective calls,
d. opening and closing communications,
e. authentication,
f. radio and electronic silence,
g. action in cases of jamming and other forms of interference,
h. change of frequency, and
i. action in cases of compromise.

128. Information which is subject to periodic change and which is required to implement Net Security Measures is detailed in SOIs and includes:

a. nicknames,
b. code words,
c. address groups,
d. callsigns, and
e. frequency designators and frequencies.

ACCURACY AND ECONOMY

How to Speak Clearly

129. Voice messages are to be sent in a way that makes them readily understood. Unless attention is paid to the manner of speech and the position of the microphone, transmission will be unsatisfactory and time will be wasted in calling for repetitions and corrections. Remember to hold the microphone close to the mouth. Speech will be more easily understood if the following rules are obeyed:

a. RHYTHM — Keep a natural rhythm. Divide messages into sensible phrases.
b. SPEED — Slightly slower than normal conversation.
c. VOLUME — As for normal conversation. Shouting causes over modulation which results in a distorted signal. If the set has 'whisper' facilities, the volume may be reduced.

d. PITCH — The voice should be pitched higher than usual when using HF equipment, but discomfort should be avoided.

These rules may be remembered by the catchword 'RSVP'.

Phonetic Alphabet

130. When it is necessary to identify any letter of the alphabet, the standard phonetic alphabet is to be used. This alphabet is listed in Table 1.

TABLE 1 — PHONETIC ALPHABET(1)

Serial	*Letter*	*Phonetic*	*Spoken As*
(a)	(b)	(c)	(d)
1.	A	ALFA	**AL** FAH.
2.	B	BRAVO	**BRAH** VOH.
3.	C	CHARLIE	**CHAR** LEE.
4.	D	DELTA	**DELL** TA.
5.	E	ECHO	**ECK** OH.
6.	F	FOXTROT	**FOKS** TROT.
7.	G	GOLF	GOLF.
8.	H	HOTEL	HOH **TELL.**
9.	I	INDIA	**IN** DEE AH.
10.	J	JULIETT	**JEW** LEE **ETT.**
11.	K	KILO	**KEY** LOH.
12.	L	LIMA	**LEE** MAH.
13.	M	MIKE	MIKE.
14.	N	NOVEMBER	NO **VEM** BER.
15.	O	OSCAR	**OSS** CAH.
16.	P	PAPA	PAH **PAH.**
17.	Q	QUEBEC	KEH **BECK.**
18.	R	ROMEO	**RO** ME OH.
19.	S	SIERRA	SEE **AIR** RAH.
20.	T	TANGO	**TANG** GO.
21.	U	UNIFORM	**YOU** NEE FORM.
22.	V	VICTOR	**VIK** TAH.
23.	W	WHISKEY	**WISS** KEY.
24.	X	XRAY	**ECKS** RAY.
25.	Y	YANKEE	**YANG** KEY.
26.	Z	ZULU	**ZOO** LOO.

Note:

1. Syllables in heavy type carry the accent.

131. Examples of the use of the phonetic alphabet are given in Chapter 3.

Pronunciation of Figures

132. When figures are transmitted by radiotelephone, the rules for their pronunciation given in Table 2 are to be observed:

TABLE 2 — PRONUNCIATION OF FIGURES

Serial	*Figure*	*Spoken As*
(a)	(b)	(c)
1.	0	ZERO.
2.	1	WUN.
3.	2	TOO.
4.	3	THUH-REE.
5.	4	FO-WER.
6.	5	FI-YIV.
7.	6	SIX.
8.	7	SE-VEN.
9.	8	ATE.
10.	9	NINER.

133. The decimal point is to be spoken as DAY-SEE-MAL.

134. The following is an example of the correct pronunciation of figures using the decimal point:

123.4 is to be spoken as, WUN TOO THUH-REE DAY-SEE-MAL FO-WER.

Prowords

135. Prowords are pronounceable words or phrases which have been given specific meanings to increase the efficiency of message handling on circuits where radiotelephone procedure is employed. Prowords, or combinations of prowords, are not to be substituted for the textual component of a message.

136. The prowords which are authorized for general use are listed in Annex A to Chapter 4.

Punctuation

137. Punctuation is to be spoken as shown in Table 3.

TABLE 3 — PRONUNCIATION OF PUNCTUATION

Serial	*Punctuation*	*Spoken As*
(a)	(b)	(c)
1.	Comma	COMMA.
2.	Full Stop	FULL STOP (or PERIOD).(1)
3.	Brackets	OPEN BRACKETS/CLOSE BRACKETS (or PAREN/UNPAREN).(1)
4.	Oblique Stroke	SLANT.
5.	Quotation Marks	QUOTE/UNQUOTE.
6.	Hyphen	HYPHEN.

RADIO NET DISCIPLINE

General

138. Good discipline is essential to the efficient working of radio nets. Irrespective of his rank, the NCS operator is in charge of the net and is responsible for its radio discipline.

139. Radio discipline includes:

a. adherence to correct radiotelephone procedure,

b. closing down and opening up of stations on the net,

c. use of correct frequency, and

d. constant radio watch by all stations on the net.

Rules for Radio Discipline

140. To prevent confusion on a radio net the following rules are to be observed:

a. To utilize circuit time more efficiently, all messages, or their substance, should be written down prior to transmission.

Note:

1. PERIOD and PAREN/UNPAREN are used in combined working only.

Those messages which are to be delivered by the receiving operator to another person, or which are preceded by the proword MESSAGE, must be written down.

b. Transmissions by radiotelephone are to be as short and concise as practicable, consistent with clarity. The use of standard phraseology results in brevity.

c. Transmissions over radiotelephone should be clear with natural emphasis on each word, except for prescribed pronunciations of figures, and are to be spoken in natural, sensible phrases, not word by word.

d. To avoid interfering with other traffic, an operator must ensure that a circuit is clear before starting a transmission.

e. When it is necessary for a station to initiate test signals, either for the adjustment of a transmitter before making a call or for the adjustment of a receiver, such signals are not to continue for more than 10 seconds, and are to be composed of spoken numerals (1, 2, 3, etc) followed by the callsign of the station transmitting the signals.

f. All calls are to be answered immediately and in correct answering order (Chapter 2, Paragraph 221).

g. Users of the radiotelephone must ensure that the radio set returns to receive after each transmission. One sticking press-to-talk switch will reduce a good circuit to a state of chaos.

Radio Operators' Logs

141. Operators are to maintain logs, when practicable, on all radio nets or circuits. Instructions for keeping the log are contained on the inside covers of the 'Radio Operator's Log' (F-Sigs 1).

JAMMING

General

142. Transmission of radio signals intended to block out or interfere with radio communications is known as jamming. Deliberate jamming of radio communications by the enemy using keyed continuous waves, tones, voices, music, artificial static or other noise signals may be expected and may be interspersed with false messages.

143. An operator may be deceived into thinking that jamming is merely heavy interference, especially if the enemy is using captured equipment, or transmitters with characteristics similar to our own.

144. The enemy will change the frequencies of jamming transmitters in an attempt to follow any frequency changes made in the radio sets being jammed, or he may use a number of transmitters to jam all frequencies simultaneously.

Planning Countermeasures

145. Tactical military operations are to include plans for maintaining communications despite interference created by enemy jamming. SOIs should include details of alternative frequencies together with specific rules for their employment.

Minimizing Jamming

146. Radio operators must be thoroughly trained to cope with jamming signals as they occur. The task of the jammer is made more difficult if operators are trained to:

a. distinguish between jamming and normal interference;

b. copy messages through sustained periods of intense static and man-made interference;

c. authenticate stations, if suspect;

d. change callsigns and frequencies at the exact times specified;

e. eliminate unnecessary calls or requests for reports on signal strength;

f. expect enemy jamming and guard against panic; and

g. change location, if using VHF or UHF frequencies, when jamming is experienced and locate the set so there is a natural or man-made obstruction between the set and the interfering signal.

Reporting

147. It is essential that enemy jamming be reported for the following reasons:

a. Jamming may be a phase of the enemy tactical plan and could even warn of an impending operation.

b. Location of the jammer by direction finding, air reconnaissance, or other means, can lead to its elimination.

c. A picture of the enemy's jamming methods can be built up from a number of individual reports, thus making it possible to devise and improve defensive measures.

CHAPTER 2

RADIO NET AND CALLS

RADIO NET

CALLSIGN ADDRESS GROUP

Definition

201. A radio net is a group of radio stations operating on the same frequency for the purpose of communicating with each other. Stations being retransmitted (rebroadcasted) to the net frequency, are considered part of the net.

202. A net is composed of:

a. a NCS, and
b. one or more substations.

Net Control Station

203. Usually, the senior command is designated as the NCS although it may be any station on the net which can best fulfil the functions of maintaining net discipline and the efficient clearance of traffic.

Substations

204. The remaining stations on the net are called substations. Substations must conform with communication instructions issued by the NCS.

205. A simple net can be shown diagramatically (see Figure 1).

SIMPLE RADIO NET

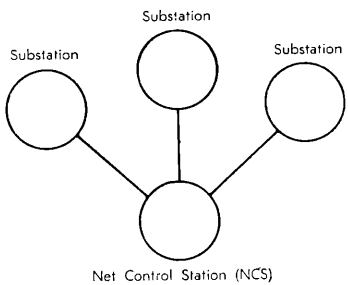

Figure 1

Callsigns and Address Groups

206. For any radio transmission on a net it is necessary for the transmitting station to identify the station(s) he wishes to call and to give his own station identity as follows:

a. A callsign which takes the form of a pronounceable word or words, or a combination of letters and figures. Fixed figure suffixes are added to the basic callsigns to provide derived callsigns within units and sub-units.

b. Callsigns are used primarily to establish communications between two or more stations on a radio net. In addition to the callsign which identifies a single station, there are other types of callsigns, as follows:
(1) *Net Callsign.* A callsign which identifies all stations on a net.
(2) *Collective Callsign.* A callsign which identifies certain predesignated stations on a net, but not all stations.

c. Callsigns and/or address groups are also used in the text of a message to replace the names of sub-units or headquarters. When used for reference purposes, the callsign is to be preceded by the proword CALLSIGN and the address group is to be preceded by the proword ADDRESS GROUP.

d. An address group is a classified group of four letters used to disguise the plain language address of a headquarters, a unit and, in some cases, a sub-unit. Address groups are used in the heading and/or text of messages which are addressed to, or refer to, stations not on the net. Having accepted these messages, the receiving station must then ensure that the messages are passed to the appropriate address group(s). The receiving station may use a radio net, telephone, or other means of communication, for this purpose.

207. Examples of address groups in message headings are given in Chapter 6.

208. Examples of callsigns and address groups in the text of messages are as follows:

a. 'Meet CALLSIGN Sabine Raider Two at . . . etc'.

b. 'CALLSIGN Brassy Oven will meet CALLSIGN Sabine Raider at . . . etc'.

c. 'Information is to be passed to ADDRESS GROUP Alfa Zulu Xray Zulu'.

d. 'SUNRAY ADDRESS GROUP Charlie Delta Echo Papa is in my area'.

209. Full callsigns are to be used:

a. when reporting into a previously established net;

b. in the transmission instructions and address component of a message that is required to be relayed to a station on a different net where the address group for that station is not known;

c. when first establishing a net under bad conditions; and

d. when ordered to do so by the NCS using the proword USE FULL CALLSIGNS.

210. Provided that no confusion can arise, callsigns are to be abbreviated unless directed otherwise by the NCS, or when a substation requests that full callsigns be used. Callsigns are abbreviated as follows:

a. Callsigns containing fixed numeral suffixes — by the simple use of the suffix only; for example, 'Sabine Raider Two' is abbreviated to 'Two'.

b. Pronounceable word callsigns — by deletion of the first word, for example, 'Sabine Raider' is abbreviated to 'Raider'.

c. Mixed letter and figure callsigns — by deletion of the first two characters; for example, 'Alfa One Nine Two' is abbreviated to 'Nine Two'.

211. Under no circumstances are address groups to be abbreviated.

Fixed Callsigns

212. Fixed callsigns for use within units and sub-units are derived from the basic unit/sub-unit callsign by the addition of a numeral suffix; a letter may be added after the numeral suffix if required.

213. In the case of RAE, for example, squadrons on the CRE net would have two changing callsigns, one for the rear link and one for forward control of its own substations. Forward control (NCS) callsign would have a fixed figure suffix added to the changing callsign and forward control would use that figure alone when abbreviated callsigns were in force within the squadron net. Similarly, all substations on the squadron net are allotted a fixed figure suffix for use as an abbreviated callsign (see Sub-paragraph 210. a.).

214. Full details of derived fixed callsign suffixes are contained in Annex A to this Chapter.

215. The fixed callsign system contained in this Pamphlet is authorized for use within the AMF, or when working with Commonwealth Armies employing a similar system.

CALLING AND ANSWERING

THIS IS
OVER
OUT
WAIT
WAIT OUT

Parts of a Call

216. A call consists of the following parts:

a. CALLSIGN — Identifies the station(s) being called.

b. THIS IS — A proword used to indicate that the callsign of the calling station follows.

c. CALLSIGN — Identifies the station calling.

d. TEXT — The message itself.

e. ENDING SIGN — A proword used to denote that transmission has ended. These are as follows:

(1) OVER — This is the end of my transmission to you and a response is necessary. Go ahead and transmit.

(2) OUT — This is the end of my transmission to you and no answer is required or expected.

217. Figure 2 shows a simple net with callsigns for NCS (Sabine Raider 1) and substations (Sabine Raider 3, 5, 6 and 7).

SIMPLE NET WITH CALLSIGNS

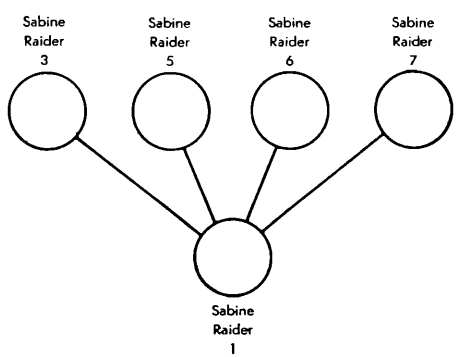

Figure 2

218. Examples illustrating the parts of a call are as follows:

a. *Example 1:*
Sabine Raider 1 (the NCS) wishes to transmit a message to Sabine Raider 3 and does not require an answer or receipt. Sabine Raider 1 transmits:

'Sabine Raider Three — THIS IS Sabine Raider One — Move now — OUT'.

b. *Example 2:*
Sabine Raider 3 wishes to transmit a message to Sabine Raider 5 and requires an answer. Sabine Raider 3 transmits:

'Sabine Raider Five — THIS IS Sabine Raider Three — Are you ready to move — OVER'.

Parts of an Answer

219. An answering transmission consists of the following parts:

a. CALLSIGN — Identifies the station being called.

b. THIS IS — A proword used to indicate that the callsign of the calling station follows.

c. CALLSIGN — Identifies the station calling.

d. TEXT — Answer or receipt.

e. ENDING SIGN — Prowords used to denote that transmission has ended or that a delay in providing the text of the answer will be incurred. These are as follows.

(1) OVER or OUT (see Paragraph 216).

(2) WAIT – I must pause for up to a maximum of five seconds. No other station is to transmit during this pause.

(3) WAIT OUT – I must pause (You must wait) for more than five seconds. Any station is free to transmit unless otherwise indicated in this transmission, or by existing restrictions, such as a directed net.

220. An example of answering calls is as follows:

Sabine Raider 1 wishes to transmit a message to Sabine Raider 3 and requires an answer. Sabine Raider 1 transmits:

'Sabine Raider Three — THIS IS Sabine Raider One — Are you ready to move — OVER'.

Sabine Raider 3 answers:

'Sabine Raider One — THIS IS Sabine Raider Three — Yes — OUT'.

or

'Sabine Raider One — THIS IS Sabine Raider Three — WAIT — (pause for maximum of five seconds) — Yes — OUT'.

or

'Sabine Raider One — THIS IS Sabine Raider Three — WAIT — OUT'.

When Sabine Raider 3 has the answer he would then transmit:

'Sabine Raider One — THIS IS Sabine Raider Three — I am ready to move — OUT'.

Order of Calling and Answering

221. Stations, including the NCS, are to be called and are to answer in alphabetical order. For this purpose, / (slant sign) is the 27th letter and the figures 1 to 0 are the 28th to 37th letters of the alphabet.

222. **Failing to Answer.** If several stations are called in one transmission and a station fails to answer in its turn, the next in turn answers after a pause of five seconds. The defaulting station is then to answer last, if able to do so.

223. The callsigns listed in Table 4 are arranged in correct alphabetical order.

TABLE 4 — CALLSIGNS IN ALPHABETICAL ORDER

Serial	*Mixed Figure and Letter Callsigns*	*Pronounceable Word Callsigns*
(a)	(b)	(c)
1.	AOPZ	ACHING MILL
2.	AZPQ	BRASSY OVEN
3.	A/QZ	CHALKY SIPHON
4.	CA95	DAMP LION
5.	4LVH	HOLLOW PISTON

224. When abbreviated callsigns are used on a net, the order of calling and answering is the same as for full callsigns. This avoids any confusion that may arise when changing from full to abbreviated callsigns.

225. The callsigns listed in Table 5 are arranged in correct alphabetical order:

TABLE 5 — ABBREVIATED CALLSIGNS IN ALPHABETICAL ORDER

Serial	*Mixed Figure and Letter Callsigns*	*Pronounceable Word Callsigns*
(a)	(b)	(c)
1.	(Alfa Oscar)[1] Papa Zulu	(Aching)[1] Mill.
2.	(Alfa Zulu) Papa Quebec	(Brassy) Oven.
3.	(Alfa Slant) Quebec Zulu	(Chalky) Siphon.
4.	(Charlie Alfa) Nine Five	(Damp) Lion.
5.	(Four Lima) Victor Hotel	(Hollow) Piston.

TYPES OF CALLS

ROGER
EXEMPT

Types of Calls

226. The types of calls used on radio nets are:

a. single call,
b. multiple call,
c. net call,
d. collective call, and
e. exempt call.

Single Call

227. A single call is a call to only one station on the net. It may be a call from the NCS, or from a substation.

Note:

1. Portions which may be deleted when callsigns are abbreviated are shown in brackets.

228. Examples of single calls are as follows:

a. *Example 1,* single call from NCS to Sabine Raider 3 (see Figure 3):

Sabine Raider 1 transmits a message to Sabine Raider 3:

'Sabine Raider Three — THIS IS Sabine Raider One — Move now — OVER'.

Sabine Raider 3 transmits:

'Sabine Raider One — THIS IS Sabine Raider Three — ROGER(1) OUT'.

SINGLE CALL FROM NCS

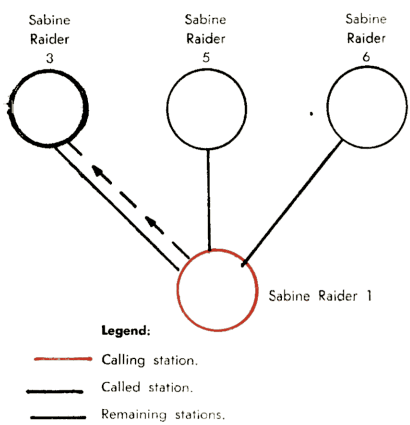

Figure 3

b. *Example 2,* single call from a substation (see Figure 4):

Sabine Raider 3 transmits a message to Sabine Raider 1:

'Sabine Raider One — THIS IS Sabine Raider Three — Moving now — OVER'.

Note:

1. ROGER in this case means 'I have received your transmission satisfactorily'.

Sabine Raider 1 transmits:

'Sabine Raider Three — THIS IS Sabine Raider one — ROGER — OUT'.

SINGLE CALL TO NCS

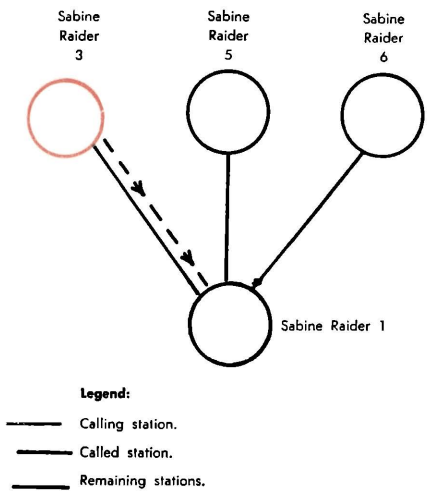

Figure 4

229. It should be noted from examples in Paragraph 228 that there is no difference between the procedure used by NCS and that used by a substation in initiating this type of call, or any other type of call that follows.

Multiple Call

230. A multiple call is one to two or more stations, but not to all stations on the net. The individual callsigns are to be separated by a distinct pause as in normal speech.

231. Examples of multiple calls are as follows:

a. *Example 1,* multiple call from the NCS (see Figure 5):

Sabine Raider 1 transmits a message to Sabine Raider 3 and Sabine Raider 5:

'Sabine Raider Three — Sabine Raider Five — THIS IS Sabine Raider One — Move now — OVER'.

Sabine Raider 3 transmits:

'Sabine Raider One — THIS IS Sabine Raider Three — ROGER — OUT'.

Sabine Raider 5 transmits:

'Sabine Raider One — THIS IS Sabine Raider Five — ROGER — OUT'.

MULTIPLE CALL FROM NCS

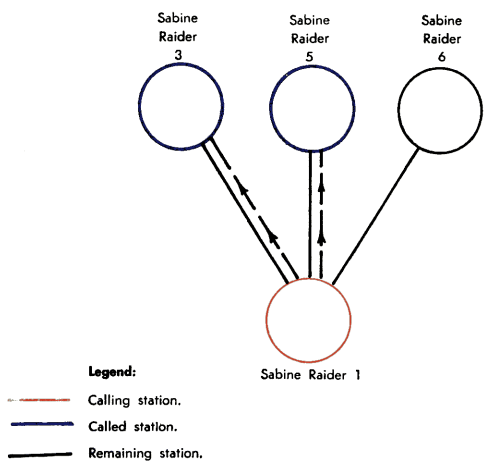

Figure 5

b. *Example 2,* multiple call from a substation (see Figure 6):

Sabine Raider 5 transmits a message to Sabine Raider 1 and Sabine Raider 3:

'Sabine Raider One — Sabine Raider Three — THIS IS Sabine Raider Five — Moving now — OVER'.

Sabine Raider 1 transmits:

'Sabine Raider Five — THIS IS Sabine Raider One — ROGER — OUT'.

Sabine Raider 3 transmits:

'Sabine Raider Five — THIS IS Sabine Raider Three — ROGER — OUT'.

MULTIPLE CALL FROM SUBSTATION

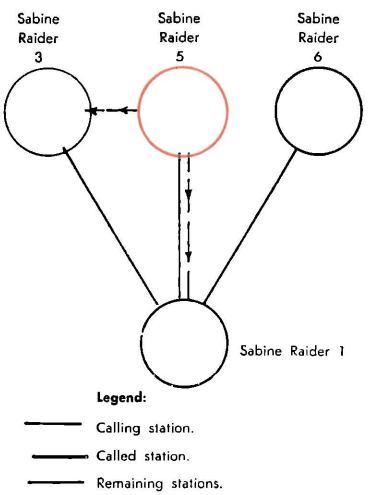

Figure 6

Net Call

232. A net call is one to all stations on the net from either the NCS or a substation.

233. Examples of net calls are as follows:

a. *Example 1,* net call from the NCS (see Figure 7):
Sabine Raider 1 transmits a message to all stations using the net callsign Sabine Raider:

'Sabine Raider — THIS IS Sabine Raider One — Move now — OVER'.

Sabine Raider 3 transmits:

'Sabine Raider One — THIS IS Sabine Raider Three — ROGER — OUT'.

Sabine Raider 5 transmits:

'Sabine Raider One — THIS IS Sabine Raider Five — ROGER — OUT'.

Sabine Raider 6 transmits:

'Sabine Raider One — THIS IS Sabine Raider Six — ROGER — OUT'.

Sabine Raider 7 transmits:

'Sabine Raider One — THIS IS Sabine Raider Seven — ROGER — OUT'.

NET CALL FROM NCS

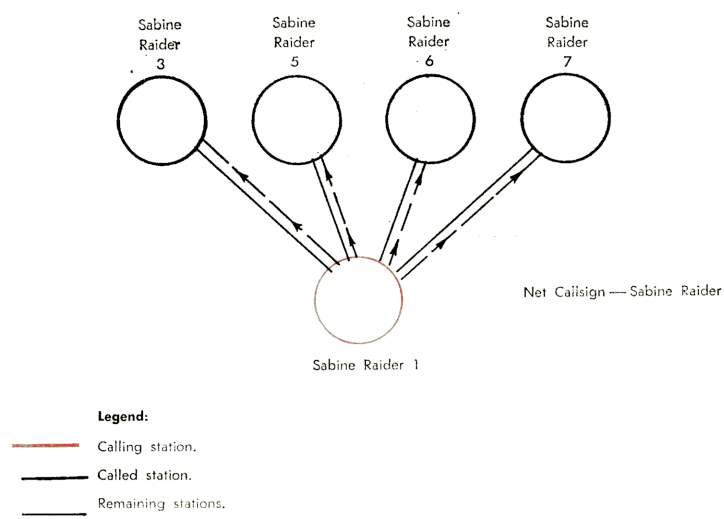

Figure 7

b. *Example 2,* net call from a substation (see Figure 8):

Sabine Raider 5 transmits a message to all stations:

'Sabine Raider — THIS IS Sabine Raider Five — Moving now — OVER'.

Sabine Raider 1 transmits:

'Sabine Raider Five — THIS IS Sabine Raider One — ROGER — OUT'.

Sabine Raider 3 transmits:

'Sabine Raider Five — THIS IS Sabine Raider Three — ROGER — OUT'.

Sabine Raider 6 transmits:

'Sabine Raider Five — THIS IS Sabine Raider Six — ROGER — OUT'.

Sabine Raider 7 transmits:

'Sabine Raider Five — THIS IS Sabine Raider Seven — ROGER — OUT'.

NET CALL FROM SUBSTATION

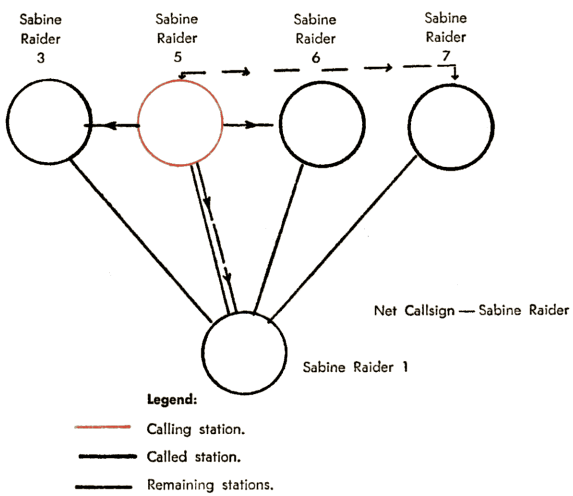

Figure 8

Collective Call

234. A collective call is one to certain stations on the net. The stations required are pre-arranged to suit the situation and it is not essential for all nets to have a collective callsign. A common use for

this type of call is where a commander wishes to speak to all his sub-unit commanders without having to use their individual callsigns.

235. Examples of collective calls are as follows:

a. *Example 1,* collective call from a NCS (see Figure 9): Sabine Raider 1 transmits to certain pre-designated stations using the collective callsign Hollow Piston. The stations to answer the call are Sabine Raider 3, Sabine Raider 5, Sabine Raider 6 and Sabine Raider 7.

'Hollow Piston — THIS IS Sabine Raider One — Move now — OVER'.

Sabine Raider 3 transmits:

'Sabine Raider One — THIS IS Sabine Raider Three — ROGER — OUT'.

Sabine Raider 5 transmits:

'Sabine Raider One — THIS IS Sabine Raider Five — ROGER — OUT'.

Sabine Raider 6 transmits:

'Sabine Raider One — THIS IS Sabine Raider Six — ROGER — OUT'.

Sabine Raider 7 transmits:

'Sabine Raider One — THIS IS Sabine Raider Seven — ROGER — OUT'.

COLLECTIVE CALL FROM NCS

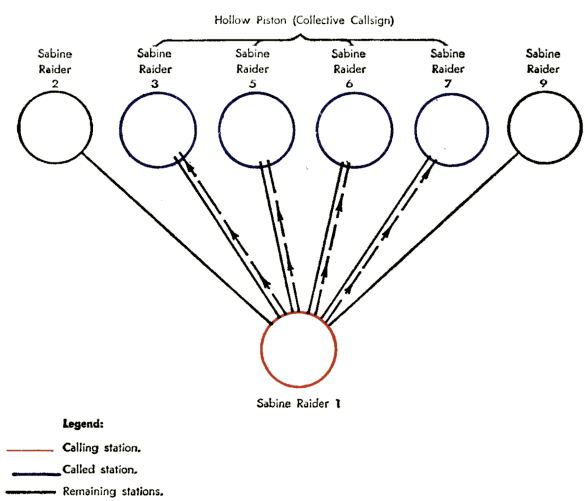

Figure 9

b. *Example 2,* collective call from a substation (see Figure 10):
Sabine Raider 6 transmits a message using the collective callsign Hollow Piston:
'Hollow Piston — THIS IS Sabine Raider Six — Moving now — OVER'.
Sabine Raider 1 transmits:
'Sabine Raider Six — THIS IS Sabine Raider One — ROGER — OUT'.
Sabine Raider 3 transmits:
'Sabine Raider Six — THIS IS Sabine Raider Three — ROGER — OUT'.
Sabine Raider 5 transmits:
'Sabine Raider Six — THIS IS Sabine Raider Five — ROGER — OUT'.
Sabine Raider 7 transmits:
'Sabine Raider Six — THIS IS Sabine Raider Seven — ROGER — OUT'.

COLLECTIVE CALL FROM SUBSTATION

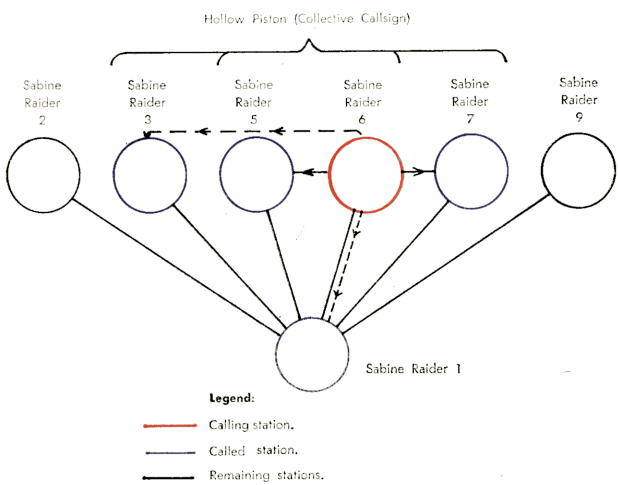

Figure 10

Exempt Call

236. A collective call, or a net call, is to be qualified by the use of the proword EXEMPT when all the stations normally concerned are not required to answer.

237. Examples of exempt calls are as follows:

a. *Example 1*, exempt call qualifying a net call (see Figure 11):

Sabine Raider 1 transmits a message to all stations less Sabine Raider 6:

'Sabine Raider — EXEMPT Sabine Raider Six — THIS IS Sabine Raider One — Move now — OVER'.

All stations are to answer in turn, except Sabine Raider 6.

NET CALL (EXEMPT)

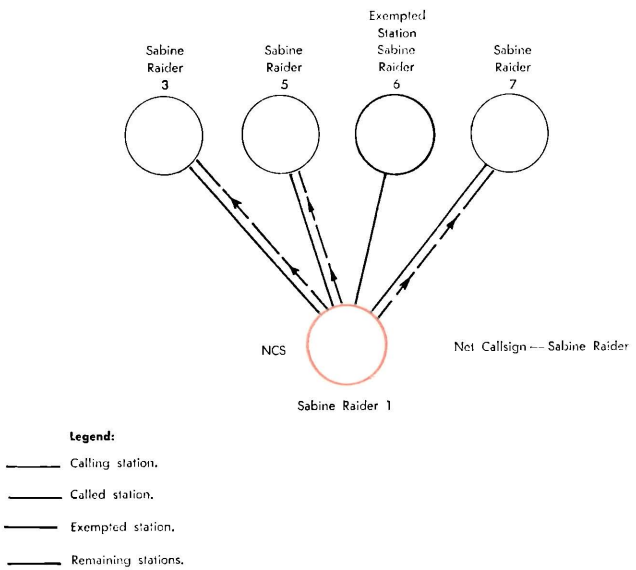

Figure 11

b. *Example 2*, exempt call qualifying a collective call (see Figure 12):

Sabine Raider 5 transmits a message to pre-designated stations included in the collective callsign Hollow Piston but exempting Sabine Raider 7:

'Hollow Piston — EXEMPT Sabine Raider Seven — THIS IS Sabine Raider Five — Moving now — OVER'.

All pre-designated stations included in the collective callsign, with the exception of Sabine Raider 7, would now answer in turn.

COLLECTIVE CALL (EXEMPT)

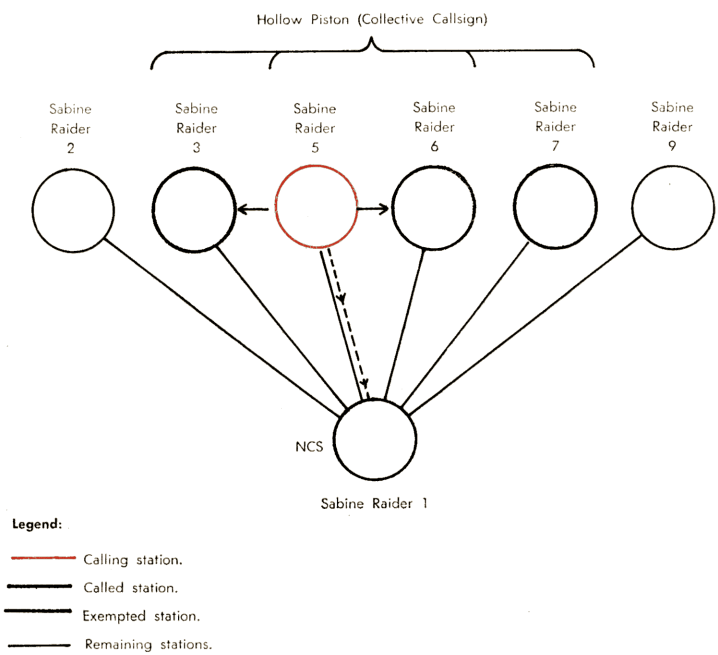

Figure 12

ABBREVIATED PROCEDURE

Rules for Abbreviated Procedure

238. Under normal working conditions abbreviated procedure is used to save time and improve security.

239. Procedure is abbreviated by omitting the callsign(s) of called station(s), other than in the initial call, and any non-essential prowords. In a single call, all callsigns may be omitted after the initial call and reply.

240. Those parts of a call which may be omitted are shown in brackets throughout the remainder of the pamphlet, except when deliberately retained for illustrative purposes.

241. Examples of abbreviated procedure including abbreviated callsigns are as follows:

a. *Example 1,* normal call:

Sabine Raider 5 transmits a message to Sabine Raider 1 and Sabine Raider 3:
'One — Three — THIS IS Five — Are you moving yet — OVER'.

Sabine Raider 1 transmits:
'(Five) — (THIS IS) One — Yes — OUT'.

Sabine Raider 3 transmits:
'(Five) — (THIS IS) Three — Yes — OUT'.

b. *Example 2,* single call:

Sabine Raider 5 transmits a message to Sabine Raider 3:
'Three — THIS IS Five — Have you received fresh batteries — OVER'.

Sabine Raider 3 replies:
'(Five) — (THIS IS) Three — No — we need them urgently — OVER'.

Sabine Raider 5 transmits:
'(Three) — (THIS IS) (Five) — Will check and let you know. Can you last for thirty minutes — OVER'.

Sabine Raider 3 replies:
'(Five) — (THIS IS) (Three) — Yes — OUT'.

242. The procedure for offering messages, including the abbreviated procedure, is contained in Chapter 3.

ANNEX A TO
CHAPTER 2

DERIVED FIXED CALLSIGN SUFFIXES

1. Fixed callsigns for use within units and sub-units are shown in appendices 1 to 7 to this Annex. They are derived from the basic unit/ sub-unit callsign by the addition of a numeral suffix; a letter may be added to the numeral if required.

2. Under normal working conditions, callsigns are abbreviated and the numeral suffix is, therefore, used alone as the callsign; for example, the basic unit callsign for the Armoured Regimental Command Net is Hollow Piston, therefore, the rear links from A, B and C Squadrons would be Hollow Piston 1, Hollow Piston 2 and Hollow Piston 3 respectively. When callsigns are abbreviated, Hollow Piston is not used and callsigns become 1, 2 and 3.

3. When a station from one net is required to join another net, a callsign is normally allotted in advance. Alternatively, the NCS may allot a spare callsign to the new station or, where there is no likelihood of confusion, the new station may retain its original callsign.

4. Collective callsigns are allotted on the same basis as basic callsigns. Numeral suffixes are not to be added to collective callsigns and each requirement for a collective call is to be covered by the issue of a separate callsign.

Appendix: 1. RAAC Fixed Callsign Suffixes.
2. RAA Fixed Callsign Suffixes.
3. RAE Fixed Callsign Suffixes.
4. RA Inf Fixed Callsign Suffixes.
5. Army Aviation Fixed Callsign Suffixes.
6. RAASC Fixed Callsign Suffixes.
7. RAEME Fixed Callsign Suffixes.

APPENDIX 1 TO
ANNEX A TO
CHAPTER 2

RAAC FIXED CALLSIGN SUFFIXES

1. **Armoured Regiment.**

a. *RHQ.*

Appointment/ Sub-unit	*Suffix*	*Appointment/ Sub-unit*	*Suffix*
HQ Stations	ØA, ØB, ØC	RTA	92
A Sqn rear link	1	B/Layers	92A, 92B, 92C
B Sqn rear link	2	Tk/Dozers	92D, 92E, 92F
C Sqn rear link	3	RMO	94
Recce Tp rear link	4	Ech A1, A2, B OC LAD	95, 95A, 95B, 95C 98
CO	9	OC HQ Sqn	99
2IC	9A	SSM HQ Sqn	99F
Adjt	9B	RPs	99G
RSO	9C	Spares	96, 96A, 96B, etc
IO	9D		97, 97A, 97B, etc
RSM	9F		
QM	91		

b. *Recce Tp.*

Appointment	*Suffix*
OC	49
Tp Vehs	41, 41A, 41B
	41C, 41D, 41E

APPENDIX 1

c. *A, B and C Sqns.*

Appointment/ Sub-unit	*Suffix*		
	A Sqn	*B Sqn*	*C Sqn*
HQ Stations	10A, 10B, 10C, 10D, 10E	20A, 20B, 20C, 20D, 20E	30A, 30B, 30C, 30D, 30E
Tps	11, 11A, 11B, 11C	21, 21A, 21B, 21C	31, 31A, 31B, 31C
	12, 12A, 12B, 12C	22, 22A, 22B, 22C	32, 32A, 32B, 32C
	13, 13A, 13B, 13C	23, 23A, 23B, 23C	33, 33A, 33B, 33C
	14, 14A, 14B, 14C	24, 24A, 24B, 24C	34, 34A, 34B, 34C
Admin Tp	15, 15A, 15B, 15C	25, 25A, 25B, 25C	35, 35A, 35B, 35C
LAD Sect	18, 18A	28, 28A	38, 38A
OC	19	29	39
2IC	19A	29A	39A
Tech Offr	19B	29B	39B
LO	19E	29E	39E
SSM	19F	29F	39F
SQMS	19H	29H	39H
Ambulance	19M	29M	39M

2. **Cavalry Regiment.**

a. *RHQ.*

Appointment/ Sub-unit	*Suffix*	*Appointment/ Sub-unit*	*Suffix*
HQ Stations	ØA, ØB, ØC, ØD	RTA	92
A Sqn rear link	1	TO	93
B Sqn rear link	2	RMO	94
3 Sqn rear link	3	Ech A1, A2, B	95, 95A, 95B, 95C
CO	9	OC LAD	98
2IC	9A	OC HQ Sqn	99
Adjt	9B	SSM HQ Sqn	99F
RSO	9C	RPs	99G
IO	9D	Spares	96, 96A, 96B, etc
LO	9E		97, 97A, 97B, etc
RSM	9F		
QM	91		

b. *A, B and C Sqns.*

Appointment/ Sub-unit	*Suffix*		
	A Sqn	*B Sqn*	*C Sqn*
HQ Stations	10A, 10B, 10C, 10D	20A, 20B, 20C, 20D	30A, 30B, 30C, 30D
Tps	11, 11A, 11B, 11C,	21, 21A, 21B, 21C,	31, 31A, 31B, 31C.
	11D, 12, 12A, 12B,	21D, 22, 22A, 22B,	31D, 32, 32A, 32B,
	12C, 12D, 13, 13A,	22C, 22D, 23 23A,	32C, 32D, 33, 33A.
	13B, 13C, 13D, 14,	23B, 23C, 23D, 24,	33B, 33C, 33D, 34.
	14A,14B, 14C,	24A, 24B, 24C,	34A, 34B, 34C.
	14D	24D	34D
Admin Tp	15, 15A, 15B	25, 25A, 25B	35, 35A, 35B
Surv Sect	16, 16A, 16B, 16C	26, 26A, 26B, 26C	36, 36A, 36B, 36C
Aslt Tp	17, 17A, 17B, 17C	27, 27A, 27B, 27C	37, 37A, 37B, 37C
LAD Sect	18, 18A	28, 28A	38, 38A
OC	19	29	39
2IC	19A	29A	39A
Tech Offr	19B	29B	39B
LO	19E	29E	39E
SSM	19F	29F	39F
SQMS	19H	29H	39H
Ambulance	19M	29M	39M

3. **Armoured Personnel Carrier Regiment.**

a. *RHQ.* The organization of the APC Regt demands that the Regimental Headquarters have a mixture of fixed and early changing callsigns:

APPENDIX 1

Appointment/ Sub-unit	*Callsign/Suffix*	*Appointment/ Sub-unit*	*Suffix*
HQ Station	Daily changing	RTA	92
A Sqn rear link	Daily changing	TO	93
B Sqn rear link	Daily changing	RMO	94
C Sqn rear link	Daily changing	Ech A1, A2, B	95, 95A, 95B,
CO	9		95C, 95D
2IC	9A	OC LAD	98
Adjt	9B	OC HQ Sqn	99
RSO	9C	SSM HQ Sqn	99F
IO	9D	Spares	96, 96A, 96B, etc
LO	9E		97, 97A, 97B, etc
RSM	9F		
QM	91		

b. *A, B and C Sqns.* The tactical employment of the squadrons allows each to have similar callsigns:

Appointment/ Sub-unit	*Suffix*
HQ Stations	ØA, ØB, ØC, ØD, ØE
1 Tp rear link	1
2 Tp rear link	2
3 Tp rear link	3
4 Tp rear link	4
Sp Ammo Tp	6
Sp Coy Tp	8
OC	9
Tech Offr	9B
LO/QM	9E
SSM	9F
SQMS	9H
Admin Tp	15, 15A, 15B, 15C
LAD Sect	18, 18A

c. *Tps.*

Appointment/ Sub-unit	*Suffix*			
	1 Tp	*2 Tp*	*3 Tp*	*4 Tp*
HQ Stations	10A, 10B 10C, 19M	20A, 20B 20C, 29M	30A, 30B 30C, 39M	40A, 40B 40C, 49M
Sects	11, 11A, 11B 12, 12A, 12B 13, 13A, 13B	21, 21A, 21B 22, 22A, 22B 23, 23A, 23B	31, 31A, 31B 32, 32A, 32B 33, 33A, 33B	41, 41A, 41B 42, 42A, 42B 43, 43A, 43B
OC	19	29	39	49
Tp Offr	19A	29A	39A	49A
Tp Sgt	19J	29J	39J	49J

Appointment/ Sub-unit	*Suffix*			
	Supporting Arms Tp		*Spt Coy Tp*	
HQ Stations		60A, 60B, 60C 60D		80A, 80B, 80C 80D
Sects	Arty Sect APC Sect APC Sect	61, 61A, 61B 62, 62A, 62B 63, 63A, 63B	Mor Sect Mor Sect Mor Sect APC Sect	81, 81A 82, 82A 83, 83A 84, 84A, 84B
OC		69		89
Tp Offr		69A		89A
Tp Sgt		69J		89J
Tp Cpl		69K		89K

APPENDIX 2 TO
ANNEX A TO
CHAPTER 2

RAA FIXED CALLSIGN SUFFIXES

1. **Formation Headquarters.**

Appointment	*Suffix*	*Appointment*	*Suffix*
Commander	9	SORA3 (Admin)	93
SORA2 (Ops)	90	IO	95
Sig Offr	91	LO	97
Arty Int Offr	92	Spare	94, 96, 98, 99

2. **Firing Units.** Units or formations that normally take part in concentrations of fire are allotted blocks of numerical suffixes according to alphabetical seniority of callsigns. The blocks are allotted 10 – 19, 20 – 29, 30 – 39, etc., and within each block the following sub-allotment is made:

a.	Command Posts	— 10	20	30
b.	COs	— 19	29	39, etc; and
c.	FOs	— 11, 12, etc.	21, 22, etc.	31, 32, etc.

3. **Non-firing Units.** These units or formations use one numerical suffix each, within the block 81 – 89, allotted according to alphabetical seniority of callsigns. Where the unit or formation requires more than one station a letter is added after the numerical suffix.

APPENDIX 2

4. **Field and Medium Regiments.**

Appointment/ Sub-unit	*Suffix*
CO	9
Regt CP	90
Adjt (Rover)	90A
Sig Offr	91
Svy Offr	92
QM	93

Appointment/ Sub-unit	*Suffix*
Spare	94, 94A, 94B, etc
Tac HQ	95
TFAIO	96
LAD	97
2IC	98
BC HQ Bty	99

Appointment/ Sub-unit	*P Bty*	*Q Bty*	*R Bty*	*S Bty*
Bty Cp	10, 10A	20, 20A	30, 30A	40, 40A
Bty Recce	10B	20B	30B	40B
FOs	11, 12, 13	21, 22, 23	31, 32, 33	41, 42, 43
OP Comms Vehicle	15	25	35	45
Spare	16, 16A, etc	26, 26A, etc	36, 36A, etc	46, 46A, etc
Sect Comd/LO	17	27	37	47
Bty Capt	18	28	38	48
BC	19	29	39	49

5. **Locating Nets.**

APPENDIX 2

Div Loc Bty	
Appointment/Sub-unit	*Suffix*
BHQ	90
Svy Tp HQ	10
Svy Tp Comd	19
Radar Tp HQ	20
Radar Tp Comd	29
TF Arty Int Offr	30, 40, 50
Met Sect	60, 61
Loc Bty Wksp	97
Bty Capt	98
Bty Comd	9

Survey Troop Net	
Appointment/Sub-unit	*Suffix*
Svy Tp HQ	10
Svy Sect	11, 12
Svy Pairs	11A to F
	12A to F
Svy Tp Comd	19
Svy Sect Comds	11G, 12G

Sound Ranging Tp Net (when deployed with Div)	
Appointment/Sub-unit	*Suffix*
S Rg CP	70
APs	71, 72
Fd Sect Comd	78
Tp Comd	79

Div Loc Net	
Appointment/Sub-unit	*Suffix*
DAIO	90
Svy Tp HQ	10
TF Arty Int Offr	30, 40, 50
Met Sect	60, 61
S Rg Tp CP (when deployed)	70
DAIO (Rover)	9

Task Force Loc Net			
Appointment/Sub-unit	*Suffix*		
Task Force Arty Int Offr	30	40	50
LPs	31A, 31B, etc	41A, 41B, etc	51A, 51B, etc
Radar Sect Comd	34	44	54
Radar	32A, 32B, etc	42A, 42B, etc	52A, 52B, etc

6. **LAA Regiment** **Appendix 2**

Appointment/ Sub-unit	*Suffix*
CO	9
Regt CP	90
Adjt (Rover)	90A
QM	93
RSM	94

Appointment/ Sub-unit	*Suffix*
Controller	95
Spare	96, 96A, 96B, etc
LAD	97
2IC	98

Appointment/ Sub-unit	*P Bty*	*Q Bty*	*R Bty*
Bty CP	10	20	30
OPs	11A to E	21A to E	31A to E
SAM Dets	12A to E	22A to E	32A to E
Controller	15	25	35
Guns	16A to L	26A to L	36A to L
Sect Comd	17A, 17B	27A, 27B	37A, 37B
Bty Capt	18	28	38
BC	19	29	39

APPENDIX 2

6. **LAA Regiment.**

Appointment/Sub-unit	*Suffix*
CO	9
Regt CP	90
Adjt (Rover)	90A
QM	93
RSM	94

Appointment/Sub-unit	*Suffix*
Controller	95
Spare	96
LAD	97
2IC	98

Appointment/Sub-unit	*P Bty*	*Q Bty*	*R Bty*	*S Bty*
Bty CP	10	20	30	40
CPs	11A to E	21A to E	31A to E	41A to E
SAM Dets	12A to E	22A to E	32A to E	42A to E
Controller	15	25	35	45
Guns	16A to L	26A to L	36A to L	46A to L
Sect Comd	17A, 17B	27A, 27B	37A, 37B	47A, 47B
Bty Capt	18	28	38	48
BC	19	29	39	49

**APPENDIX 3 TO
ANNEX A TO
CHAPTER 2**

RAE FIXED CALLSIGN SUFFIXES

1. **Field Squadron.**

Appointment/Sub-unit	*Suffix*
Sqn HQ Stations	0A, 0B
OC	9
2IC	9A
Admin Offr	9B
Recce Offr	9E
1 Tp	1
2 Tp	2
3 Tp	3
Engr Sp Tp	4
Spares	5, 6, 7

2. **Construction Squadron.**

Appointment/Sub-unit	*Suffix*
Sqn HQ Station	0A
OC	9
2IC	9A
Admin Offr	9B
Const Offr	9E
1 Tp	1
2 Tp	2
3 Tp	3
Resources Tp	4
Plant Tp	5

3. **Engineer Support Squadron.**

Appointment/Sub-unit	*Suffix*
Sqn HQ Station	0A
OC	9
2IC	9A
HQ Tp	99
Sp Tp	1
Sp Tp	2
Sp Tp	3

4. **Section Callsigns.** Within troops, section callsigns are derived by adding a second numeral to the troop callsign. The first section of 1 Troop would be 11, the first section of 2 Troop would be 21 and so on.

APPENDIX 4 TO
ANNEX A TO
CHAPTER 2

RA INF FIXED CALLSIGN SUFFIXES

1. **Infantry Battalion.**

a. *BHQ.*

Appointment/Sub-unit	*Suffix*
HQ Station, Rear Base HQ Station	0A, 0B
A Coy rear link	1
B Coy rear link	2
C Coy rear link	3
D Coy rear link	4
Fifth Coy rear link if required	5
Sp Coy rear link	6
Right Flank Unit	7
Mor Pl	8
CO	9
2IC	9A
Ops Officer	9B
RSO	9C
IO	9D
LO	9E
Officer Airborne	9Y
A tk Pl	61
Tracker Team	61A
Pnr Pl	62
Surv Pl	63
OC Sp Coy	69
Admin Coy Rear Link	90
QM	91
RMO	92
TO	93
Admin Elements: F Ech, A Ech, B Ech, AQ Cell and LZs	95, 95A, 95B, 95C, etc
Retransmission	97, 97A, etc
Spare	94, 94A, 94B, etc 96, 96A, 96B, etc 98, 98A, 98B, etc
OC Admin Coy	99

APPENDIX 4

b. ***Rifle Coys and Mor Pl.***

Appointment/Sub-unit	*Suffix*				
	A Coy	*B Coy*	*C Coy*	*D Coy*	*Mor Pl*
HQ Stations	10	20	30	40	
Rifle Pl rear link	11, 12, 13	21, 22, 23	31, 32, 33	41, 42, 43	
First Sect rear link	11A, 12A, 13A	21A, 22A, 23A	31A, 32A, 33A	41A, 42A, 43A	
Second Sect rear link	11B, 12B, 13B	21B, 22B, 23B	31B, 32B, 33B	41B, 42B, 43B	
Third Sect rear link	11C, 12C, 13C	21C, 22C, 23C	31C, 32C, 33C	41C, 42C, 43C	
Mor Pl HQ Station					80
	1 Sect	2 Sect	3 Sect	Pl Sgt	
Mor Sect Baseplates	81	82	83	(A ECH)	
Mor Sect MFC	81A	82A	83A	87	
	A Coy	B Coy	C Coy	D Coy	Mor Pl
Rover Stations	19	29	39	49	89

APPENDIX 5 TO
ANNEX A TO
CHAPTER 2

ARMY AVIATION FIXED CALLSIGN SUFFIXES

1. **Aviation Regiment.**

a. *RHQ.*

Appointment/Sub-unit	*Suffix*
HQ Stations	0A, 0B
CO	9
2IC	9A
Adjt	9B
LO	9E
Div HQ Sqn	1
Avn Sqn Recce	2
Spares	3, 4

b. *Div HQ Sqn.*

Appointment/Sub-unit	*Suffix*
HQ Stations	10A, 10B
OC	19
LO	19E
Air Cav Flt	11A, 11B
RW ac	11C, 11D, 11E, 11F, 11G, 11H, 11I, 11J
FW ac	11K, 11L, 11M, 11N
Surv Flt	12A, 12B
FW ac	12C, 12D, 12E, 12F, 12G, 12H, 12I, 12J
Air OP Flt	13A, 13B
RW ac	13C, 13D, 13E, 13F, 13G, 13H, 13I, 13J
FW ac	13K, 13L, 13M, 13N
Comd Liaison Flt	14A, 14B
RW ac	14C, 14D, 14E, 14F, 14G, 14H, 14I, 14J
FW ac	14K, 14L, 14M, 14N
Admin Flt	15A
Spares	15B, 15C, 15D

c. *Avn Sqn Recce.*

Appointment/Sub-unit	*Suffix*
HQ Stations	20A, 20B
OC	29
LO	29E, 29F, 29G
Recce Flt	21A, 21B
RW ac	21C, 21D, 21E, 21F, 21G, 21H, 21I, 21J
FW ac	21K, 21L, 21M, 21N
Recce Flt	22A, 22B
RW ac	22C, 22D, 22E, 22F, 22G, 22H, 22I, 22J
FW ac	22K, 22L, 22M, 22N
Recce Flt	23A, 23B
RW ac	23C, 23D, 23E, 23F, 23G, 23H, 23I, 23J
FW ac	23K, 23L, 23M, 23N
Admin Flt	25A
Spares	25B, 25C, 25D

**APPENDIX 6 TO
ANNEX A TO
CHAPTER 2**

RAASC FIXED CALLSIGN SUFFIXES

1. **HQ CRAASC.**

Appointment/Sub-unit	*Suffix*
HQ Station	0A
Coy rear link	1
Coy rear link	2
Coy rear link	3
Spares	4, 5

2. **RAASC Coys.**

Appointment/ Sub-unit	*Suffix*		
	Coy	*Coy*	*Coy*
HQ Station	10A	20A	30A
Pls/elms	11, 12, 13, 14, etc	21, 22, 23, 24, etc	31, 32, 33, 34, etc

**APPENDIX 7 TO
ANNEX A TO
CHAPTER 2**

RAEME FIXED CALLSIGN SUFFIXES

1. **RAEME Recovery Control.**

Appointment/Sub-unit	*Suffix*		
HQ CRAEME	0A		
	Wksp	*Wksp*	*Wksp*
HQ Station (Wksp)	10A	20A	30A
Rec Pl	11	21	31
Fwd Repair Team	12A, 12B	22A, 22B	32A, 32B
Rec Veh Lt	13A, 13B	23A, 23B	33A, 33B
Rec Veh Med	14A, 14B 14C, 14D	24A, 24B 24C, 24D	34A, 34B 34C, 34D
Rec Veh Hy	15A	25A	35A
ARV	16A	26A	36A

CHAPTER 3

PROCEDURES FOR NORMAL WORKING CONDITIONS

ESTABLISHING COMMUNICATIONS

NET NOW
RE-NET
RADIO CHECK
NOTHING HEARD
ROGER
LOUD
GOOD
WEAK
VERY WEAK
FADING
CLEAR
READABLE
DISTORTED
INTERFERENCE
UNREADABLE

Establishing a Net

301. All stations are to be in possession of the following information before establishing a net:

a. The time the net is to open.

b. The organization of the net.

c. The callsigns and address groups.

d. The codes, code words and nicknames, authentication table.

e. The frequencies assigned to the net.

f. The net security measures.

302. Abbreviated callsigns and abbreviated procedure are to be used in establishing communications, unless conditions are difficult.

303. The use of the procedure described in this Chapter is to be followed either when opening a net for the first time, or when reopening a net. Proper control by the NCS and adherence to operating rules by the stations within the net enable the net to begin, and maintain, an exchange of traffic with minimum delay.

304. Examples of establishing communications, in good conditions and difficult conditions, are as follows:

a. *Example 1,* good conditions:

At the designated time the NCS transmits to all stations:

'Raider — THIS IS One — OVER'.

Each substation then answers the call in alphabetical order:

'(One) — (THIS IS) Three — OVER'.
'(One) — (THIS IS) Five — OVER'.
'(One) — (THIS IS) Six — OVER'.
'(One) — (THIS IS) Seven — OVER'.

The NCS now calls the net to inform all stations that their transmissions have been heard and that he has no traffic for them:

'(Raider) — (THIS IS) One — OUT'.

b. *Example 2,* difficult conditions:

In this Example the substation Sabine Raider 6 is unable to answer the net call because he does not hear it. The NCS transmits:

'Sabine Raider — THIS IS Sabine Raider One — OVER'.

The first two stations then answer:

'(Sabine Raider One) — (THIS IS) Sabine Raider Three — OVER'.

'(Sabine Raider One) — (THIS IS) Sabine Raider Five — OVER'.

Sabine Raider 7, hearing no answer from Sabine Raider 6, waits approximately five seconds and then transmits:

'(Sabine Raider One) — (THIS IS) Sabine Raider Seven — OVER'.

Having received answers from all stations, except Sabine Raider 6, the NCS transmits:

'(Sabine Raider) — (THIS IS) Sabine Raider One — Sabine Raider Six — NOTHING HEARD — OUT'.

Sabine Raider 6, when conditions become good, calls the NCS to report into the net.

Sabine Raider One — THIS IS Sabine Raider Six — Reporting into the net — OVER'.

The NCS, having no traffic for Sabine Raider 6, transmits:

'(Sabine Raider Six) — (THIS IS) Sabine Raider One — OUT'.

305. Note that Example 2 is used to illustrate 'Failing to Answer' procedure. In normal practice a station reporting late into a net would be required to authenticate (see Chapter 5).

Radio Checks, Signal Strengths and Readability

306. A station is understood to have good signal strength and readability unless otherwise notified. Strength of signals and readability are not to be exchanged unless one station cannot clearly hear another station.

307. A station who wishes to inform another of his signal strength and readability is to do so by means of a short and concise report of actual reception such as 'weak but readable', 'loud but distorted', 'weak with interference', etc.

308. The following prowords are for use when initiating and answering queries concerning signal strength and readability:

a. *General.*

(1) RADIO CHECK — What is my signal strength and readability, that is, how do you hear me?

(2) ROGER — I have received your last transmission satisfactorily. The omission of comment on signal strength and readability is understood to mean that reception is satisfactory. If reception is other than satisfactory it must be described with the prowords from Sub-paragraphs 308. b. and 308. c.

(3) NOTHING HEARD — To be used when no reply is received from a called station.

b. *Report of Signals Strength.*

(1) LOUD — Your signal is very strong.

(2) GOOD — Your signal strength is good.

(3) WEAK — Your signal strength is weak.

(4) VERY WEAK — Your signal strength is very weak.

(5) FADING — At times your signal strength fades to such an extent that continuous reception cannot be relied upon.

c. *Report of Readability.*

(1) CLEAR — Excellent quality.

(2) READABLE — Quality is satisfactory.

(3) DISTORTED — Having trouble reading you because your signal is distorted.

(4) INTERFERENCE — Having trouble reading you due to interference.

(5) UNREADABLE — The quality of your transmission is so bad that I cannot read you.

309. When one station requests a radio check with one or more stations, the originating station will, in its reply, give a radio check to the other station or stations called. This is illustrated in the following example:

The NCS desires a radio check with Sabine Raider 3 and transmits:

'Three — THIS IS One — RADIO CHECK — OVER'.

Sabine Raider 3 hears the NCS loud but distorted so replies:

'(One) — (THIS IS) Three — LOUD but DISTORTED — OVER'.

The NCS hears Sabine Raider 3 satisfactorily and transmits:

'(Three) — (THIS IS) (One) — ROGER — OUT'.

310. The occasion may arise when the NCS wishes to know not only how substations are hearing him, but also how they are hearing one another; thus obtaining a clear picture of the communication state of the net. This is done by a radio check to all stations, followed by a report of signal strengths and readability. If the information is required when first establishing communications, the procedure contained in Paragraphs 303 and 304 is to be replaced by the procedure given in the following example:

The NCS wishes to obtain the communication state of the net and transmits to all stations:

'Raider — THIS IS ONE — RADIO CHECK — OVER'.

All stations on the net hear Sabine Reader 1 satisfactorily, with the exception of Sabine Raider 7. The replies of each station, in alphabetical order, are as follows:

'(One) — (THIS IS) Three — ROGER — OVER'.

'(One) — (THIS IS) Five — ROGER — OVER'.

'(One — (THIS IS) Six — ROGER — OVER'.

'(One) — (THIS IS) Seven — WEAK with INTERFERENCE — OVER'.

The NCS indicates his reception of each of the called stations as satisfactory, except for Sabine Raider 3 who was good but distorted and Sabine Raider 7 who was not heard, by replying:

'(Raider) — (THIS IS) One — Three GOOD but DISTORTED — Seven NOTHING HEARD — Report strengths and readability — OVER'.

Substations now indicate how they hear one another:
'(One) — (THIS IS) Three — Five NOTHING HEARD — OUT'.
'(One) — (THIS IS) Five — Three WEAK WITH INTERFERENCE — OUT'.
'(One) — (THIS IS) Six — ROGER — OUT'.
'(One) — (THIS IS) Seven — Three VERY WEAK and UNREADABLE — OUT'.

Signal Strength Reports

311. When ordered to do so, operators are to keep a Signal Strength Report Sheet (see Figure 13). The report provides quick and easy reference to the state of communications between all stations on a radio net.

312. The horizontal rows give the strength and readability of signals which the station named in the left hand column reports hearing from the other stations on the net; for example, in the report shown, callsign 5 hears Control, 6 and 7 satisfactorily but hears callsign 3 weak with interference.

SIGNAL STRENGTH REPORT

SIGNAL STRENGTH REPORT

STATION ..... Sabine Raider 5

Report No 1

Time ..... 1500 hrs, 16 Oct 69

	1 (NCS)	3	5	6	7
1 (NCS)		GD	√	√	NH
3	√		NH	√	√
5	√	WI		√	√
6	√	√	√		√
7	WI	VWX	√	√	

Figure 13

313. Abbreviations used in these reports are listed in Table 6.

TABLE 6 — ABBREVIATIONS USED IN SIGNAL STRENGTH REPORT

Serial	*Meaning*	*Abbreviation*
(a)	(b)	(c)
1.	Satisfactory (ROGER)	√
2.	LOUD	L
3.	GOOD	G
4.	WEAK	W
5.	VERY WEAK	VW
6.	FADING	F
7.	CLEAR	CL
8.	READABLE	RDL
9.	DISTORTED	D
10.	INTERFERENCE	I
11.	UNREADABLE	X
12.	NOTHING HEARD	NH

Tuning

314. If the radio sets require tuning for accurate netting, a more deliberate procedure is required as follows:

a. The NCS wishes to establish a net on a new frequency. At the time arranged for establishing communications, the NCS listens on the frequency and finding it clear transmits:

'Sabine Raider — THIS IS Sabine Raider One — Hear tuning call — Sabine Raider — Sabine Raider (repeated for 20 seconds) — NET NOW — (holds down press-to-talk switch for 20 seconds) OUT'.

b. After allowing time for stations to adjust their transmitters, the NCS is to establish communications as shown in Example 1 of Paragraph 304.

315. If any stations are off frequency, they are to be given further netting by the NCS as follows:

'Sabine Raider Six — THIS IS Sabine Raider One — RE-NET — NET NOW — (Holds down press-to-talk switch for 20 seconds) — (Sabine Raider) Six — THIS IS (Sabine Raider) One — OVER'.

Sabine Raider 6 transmits:

'(Sabine Raider) (One) — (THIS IS) (Sabine Raider) Six — OVER'.

NCS Transmits:
'(Sabine Raider) (Six) — (THIS IS) (Sabine Raider) One — OUT'.

SPELLING, FIGURES, MIXED GROUPS GRID REFERENCES, ABBREVIATIONS

I SPELL
FIGURES
GRID

Spelling

316. Difficult words or groups within the text of plain text messages may be spelled using the phonetic alphabet. Such spelling is to be preceded by the proword I SPELL. Wherever possible the word should be identified by pronouncing it before and after spelling, as illustrated in the following example:

'Move to BANQUO — I SPELL — Bravo Alfa November Quebec Uniform Oscar — BANQUO'.

317. Where a text is encoded, the groups are to be transmitted by use of the phonetic equivalents of the individual letters and without the use of the proword I SPELL, even though they may occasionally be pronounceable. Distinct pauses are to be made between groups.

Figures

318. Numbers are to be transmitted digit by digit, except that exact multiples of hundreds and thousands may be spoken as such. When it is considered necessary to distinguish numerals from words similarly pronounced, the proword FIGURES is to be used preceding such numbers.

319. Examples of spoken numbers are shown in Table 7.

TABLE 7 — SPOKEN NUMBER

Serial	*Number*	*Spoken As*
(a)	(b)	(c)
1.	44	FO-WER FO-WER.
2.	90	NINER ZERO.
3.	136	WUN THUH-REE SIX.
4.	500	FI-YIV HUN-DRED.
5.	1478	WUN FO-WER SE-VEN ATE.
6.	7000	SE-VEN THOW-SAND.
7.	16000	WUN SIX THOW-SAND.
8.	812681	ATE WUN TOO SIX ATE WUN.

Mixed Groups

320. Mixed groups are normally sent digit by digit. Letters are to be sent by means of the phonetic alphabet, preceded if necessary by the proword I SPELL as illustrated in the following examples:

a. *Example 1:*
'Vehicle 13 CB 34' would be sent as 'vehicle (FIGURES) One Three (I SPELL) Charlie Bravo (FIGURES) Three Four'.

b. *Example 2:*
'Require 100 pads message form F – Sigs 52 – 1' would be sent as:
'Require (FIGURES) One Hundred pads message form (I SPELL) Foxtrot Hyphen Sigs (FIGURES) Five Two Hyphen (FIGURES) One'.

Grid References

321. All grid references, including those encoded, are sent digit by digit and any letters are to be pronounced phonetically. A grid reference in clear is easier to interpret if a pause is made between the Eastings and Northings. All grid references are preceded by the proword GRID.

322. Examples of grid references, in clear and in code, are as follows:

a. *Example 1,* in clear:
'Enemy at GRID — three two six — eight four seven'.

b. *Example 2,* using Numeral Code:
'Go to GRID — Uniform Xray Zulu Foxtrot Bravo Delta Alfa'.

Abbreviations

323. Abbreviations are primarily designed to save time in writing. However, some abbreviations also save time when talking and, as a result, are widely used in normal speech. On a radio net an abbreviation may be spoken as in normal conversation if there is no doubt that it will be received and understood correctly. If there is any doubt, the abbreviation is to be spelt phonetically.

324. Examples of abbreviations which may be spoken are:

a. recce,

b. ops,

c. NCO, and

d. NATO

325. An operator is to send an abbreviation exactly as it is given to him.

326. Abbreviations are not to be used for Joint or Combined working unless authorized.

TRANSMISSION OF MESSAGES

MESSAGE
SEND YOUR . . .
LONG MESSAGE
MORE TO FOLLOW
ALL AFTER
OUT TO YOU

Offering a Message

327. An offer is a preliminary call made to warn a station that a message follows. Messages are offered when:

a. it is necessary for the message to be written down;

b. in difficult conditions, it is necessary for the sender to satisfy himself that communications are sufficiently good for all his message to be received; and

c. a net is directed (see Chapter 4).

328. Messages may be offered by means of:

a. the abbreviated offer, which does not involve use of a proword; or

b. the proword MESSAGE or LONG MESSAGE, or a warning of the type of message which follows; for example 'orders', BOMREP, MORTREP, SITREP, etc.

Abbreviated Offer

329. If it is expected that conditions may be difficult, for example when a station is moving, but the message does not necessarily have to be written down, the abreviated offer is used as follows:

3 transmits to 5:

'Five — THIS IS Three — OVER'.

5 transmits:

'(Three) — (THIS IS) Five — OVER'.

3 transmits:

'(Five) — (THIS IS) (Three) — Your SUNRAY has left this location — OVER'.

5 transmits:

'(Three) — (THIS IS) (Five) — (ROGER) — OUT'.

Written Messages

330. If a message has to be written down, a proword is used to indicate the type of message and if a proforma is required.

331. Use of the proword MESSAGE in the offer indicates simply that the message is to be written down, as illustrated in the following example:

1 transmits to 6:
'Six — THIS IS One — MESSAGE — OVER'.

6 transmits:
'(One) — (THIS IS) Six — (SEND YOUR MESSAGE) — OVER'.

1 transmits:
'(Six) — (THIS IS) (One) — Move to GRID — Mike Sierra Alfa Tango Juliett Bravo Xray — OVER'.

6 transmits:
'(One) — (THIS IS) (Six) — (ROGER) — OUT'.

332. **Orders.** When orders are given by radio it is desirable that they should be received by a responsible person and often they must be written down. The word 'Orders' is used in the offer, as illustrated in the following example:

7 transmits to 3:
'Three — THIS IS Seven — 'Orders' — OVER'.

3 transmits:
'(Seven) — (THIS IS) Three — (SEND YOUR 'Orders') — OVER'.

7 transmits:
'(Three) — (THIS IS) (Seven) — 'Orders' . . . etc'.

333. **Reports.** Reports invariably require to be written down on a proforma. They are offered using the word appropriate to the type of report, such as, SITREP, MORTREP, SHELREP, etc.

334. An example of offering a SHELREP is as follows:

6 transmits to control:
'One — THIS IS Six — SHELREP — OVER'.

1 transmits:
'(Six) — (THIS IS) One — WAIT . . . (SEND YOUR SHELREP) — OVER'.

6 transmits:
'(One) — (THIS IS) (Six — SHELREP — Alfa — CALLSIGN Six — Bravo — Delta Lima Alfa Foxtrot Charlie Zulu Yankee — Charlie — . . . etc'.

Long Message Procedure

335. Long Message Procedure is not to be used in Joint or Combined working. If a message will take more than half a minute to send, the following procedure is to be used.

a. The message is offered using the proword LONG MESSAGE.

b. The message is to be sent in sections each lasting approximately half a minute and each, except for the last section, terminating with the proword MORE TO FOLLOW.

c. Receiving stations are to acknowledge each section, and, if necessary, ask for repetitions, (see Paragraphs 337 to 342).

d. After obtaining receipts for each section from all or selected receiving stations, the sender is to pause for five seconds. This will allow other stations to transmit urgent traffic.

e. The transmitting station may interrupt his own message to send a more urgent one.

f. If there is no interruption, the next section is transmitted, preceded by the last word or phrase of the preceding section.

g. If there is an interruption, the next section will be transmitted preceded by ALL AFTER followed by the last word or phrase of the section previously transmitted.

h. This procedure is continued until the message is cleared.

336. Examples of Long Message Procedure are as follows:

a. *Example 1,* no interruptions:

Serial	*Callsign Sabine Raider 1*	*Callsign Sabine Raider 5*	*Remarks*
(a)	(b)	(c)	(d)
1.	Five — This is One — LONG MESSAGE — OVER.		I has a long message for 5.
2.		(One) — (THIS IS) Five — (SEND YOUR MESSAGE) — OVER.	
3.	(Five) — (THIS IS) (One) — Tanks advancing from wood GRID — six seven — four two supported by infantry — Mortars firing on buildings GRID — six eight one — four two three with smoke — MORE TO FOLLOW — OVER.		

(a)	(b)	(c)	(d)
4.		(One) — (THIS IS) (Five) — (ROGER) — OVER.	5 requires no corrections or repetitions. 1 observes a five-second pause to allow any urgent messages to be passed.
5.	(Five) — (THIS IS) (One) — Smoke — no indication of attack — from that direction — but advise move with caution — OVER.		
6.		(One) — (THIS IS) (Five) — (ROGER) — OUT.	5 replies that he has received the message satisfactorily. Transmission ends.

b. *Example 2,* interruption by transmitting station:

Serial	*Callsign Sabine Raider 1*	*Callsign Sabine Raider 6*	*Callsign Sabine Raider 7*	*Remarks*
(a)	(b)	(c)	(d)	(e)
1.	Six — THIS IS One — LONG MESSAGE — OVER.			1 has a long message for 6.
2.		(One) — (THIS IS) Six — (SEND YOUR MESSAGE) — OVER.		
3.	(Six) — (THIS IS) (One) — Enemy tanks entering wood North East — WAIT — OUT TO YOU — Seven — THIS IS One — Move to ACE HIGH now — OVER.			1 has an urgent message for 7.
4.			(One) — (THIS IS) Seven — (ROGER) — OUT.	1 observes a five-second pause before continuing with his message to 6.
5.	Six — THIS IS One — ALL AFTER North East of lake GRID — five seven two — seven eight three — supported by infantry MORE TO FOLLOW — OVER.			

(a)	(b)	(c)	(d)	(e)
6.		(One) — (THIS IS) Six — (ROGER) — OVER.		
				1 observes a five-second pause before continuing.
7.	(Six) — (THIS IS) (One) — infantry Full Stop — Wood to the North West reported clear of enemy — OVER.			
8.		(One) — (THIS IS) (Six) — (ROGER) — OUT.		Transmission ends.

c. *Example 3,* interruption by another station:

Serial	*Callsign Sabine Raider 1*	*Callsign Sabine Raider 3*	*Callsign Sabine Raider 6*	*Callsign Sabine Raider 7*	*Remarks*
(a)	(b)	(c)	(d)	(e)	(f)
1.		Seven — THIS IS Three — LONG MESSAGE — OVER.			3 has a long message for 7.
2.				(Three) — (THIS IS) Seven — (SEND YOUR MESSAGE) — OVER.	
3.		(Seven) — (THIS IS) (Three) — Mortar firing on buildings GRID — six eight one — four two three with smoke — MORE TO FOLLOW — OVER.			
4.				(Three) — (THIS IS) (Seven) — (ROGER) — OVER.	
5.			One — THIS IS Six — Moving to alternative position now — OVER.		6 breaks in during the five-second pause with an urgent message for NCS.

(a)	(b)	(c)	(d)	(e)	(f)
6.	(Six) — (THIS IS) One — (ROGER) — OUT.				
7.		Seven — THIS IS Three — ALL AFTER smoke — Full Stop — no indication of attack — from that direction — OVER.			3 observes a further five-second pause before continuing.
8.				(Three) — (THIS IS) Seven — (ROGER) — OUT.	Transmission ends.

CORRECTIONS AND REPETITIONS

CORRECTION
I SAY AGAIN
SAY AGAIN
ALL BEFORE
WORD AFTER
WORD BEFORE
FROM . . . TO . . .
SPEAK SLOWER
UNKNOWN STATION

Correction During Transmission

337. When an error is made by a transmitting operator, the proword CORRECTION is to be transmitted followed by the last word, group, proword or phrase correctly transmitted; transmission then continues. Care should be taken to avoid using words or prowords which appear more than once in the message.

338. Examples of corrections during transmission are as follows:

a. *Example 1:*

3 transmits to 6:

'Six — THIS IS Three — Convoy Romeo Three — CORRECTION — Romeo Four should arrive at One Six Three Zero Lima — OVER'.

6 transmits:

'(Three) — (THIS IS) Six — (ROGER) — OUT'.

b. *Example 2:*

7 transmits to 5:
'Five — THIS IS Seven (CRYPTO MESSAGE) — Zulu Bravo Alfa — Xray Oscar — CORRECTION — Zulu Bravo Alfa — Xray Quebec Alfa — etc . . . — OVER'.

5 transmits:
'(Seven) — (THIS IS) Five — (ROGER) — OUT'.

339. When an error in transmission is made and is not discovered immediately, but is discovered before the ending sign is transmitted, a correction is to be transmitted before the ending sign. When making such a correction, the word, group, proword or phrase to be corrected is to be properly identified, as illustrated in the following example:

1 transmits to 3:

'Three — THIS IS One — Mortars firing on buildings at GRID — six eight one — four two three with smoke — CORRECTION — WORD AFTER GRID five — OVER'.

3 transmits:

'(ONE) — (THIS IS) Three — (ROGER) — OUT'.

Corrections After Message Has Been Sent

340. If it is necessary to make corrections after a receipt has been obtained for a message, a further message, identifying the incorrect message and the portion to be corrected, must be originated and transmitted as follows:

1 transmits to 3:
'Three — THIS IS One — Reference my message on mortars — CORRECTION — WORD AFTER one — five — OVER'.

3 transmits:
'(One) — (THIS IS) Three — (ROGER) — OUT'.

Repetitions

341. When words are missed, or are in doubt, repetitions are to be requested and given by stations, in turn, before receipting for the message. The proword SAY AGAIN used alone or in conjunction with ALL BEFORE, ALL AFTER, FROM . . . TO . . ., WORD BEFORE, WORD AFTER, or another suitable word, (for example, CALLSIGN, TIME, GRID, etc) is to be used for this purpose. In complying with requests for repetitions, the transmitting station is to identify that portion which is being repeated. It is normal with short messages to use the proword SAY AGAIN rather than ask for one or two words to be repeated.

342. Examples of repetitions are as follows:

Serial	*Callsign Sabine Raider 5*	*Callsign Sabine Raider 6*	*Callsign Sabine Raider 7*	*Remarks*
(a)	(b)	(c)	(d)	(e)
1.	Six — Seven — THIS IS Five — 'Orders' — OVER.			5 has a message for 6 and 7.
2.		(Five) — (THIS IS) Six — (SEND YOUR 'Orders') — OVER.		
3.			(Five) — (THIS IS) Seven — (SEND YOUR 'Orders') — OVER.	
4.	(Six) — (Seven) — (THIS IS) Five — ('Orders') — Proceed today to CARPET Full Stop — Report to SUNRAY — ADDRESS GROUP Alfa Delta Quebec Xray — by (FIGURES) zero nine hundred hours — OVER.			
5.		(Five) — (THIS IS) Six — SAY AGAIN FROM proceed TO SUNRAY — OVER.		6 missed that portion of the message between 'proceed' and 'SUNRAY'.
6.	(Six — (THIS IS) Five — I SAY AGAIN — FROM PROCEED TO SUNRAY — proceed to CARPET Full Stop — Report to SUNRAY — OVER.			5 replies to this request before the next station asks for repetitions.
7.		(Five) — (THIS IS) Six — (ROGER) — OUT.		6 has now received the message satisfactorily. 7 now asks for his repetitions; he missed from 'today' to 'SUNRAY' and the word after 'zero'. Having heard the repetition from 6, he only requires the word after 'zero'.

(a)	(b)	(c)	(d)	(e)
8.			(Five) — (THIS IS) Seven — SAY AGAIN WORD AFTER zero — OVER.	
9.	'(Seven) — (THIS IS) Five — I SAY AGAIN WORD AFTER zero — nine — OVER'.			5 replies to the request.
10.			(Five) — (THIS IS) Seven — (ROGER) — OUT.	7 has now received the message satisfactorily. Transmission ends.

Speed of Transmission

343. If a receiving station has difficulty in recording a written message because the sending operator is speaking too rapidly, the receiving operator may request a reduction in the speed of transmission by the use of the proword SPEAK SLOWER.

Unknown Station

344. A station hearing a call for his station may miss the callsign of the calling station. In this event, he is to answer as shown in the following example:

1 is calling 7 but 7 does not hear the callsign of 1.

7 hears:

'Seven — THIS IS . . . — Move Now — OVER'.

7 transmits:

'UNKNOWN STATION — THIS IS Seven — SAY AGAIN CALLSIGN — OVER'.

1 transmits:

'Seven — THIS IS One — I SAY AGAIN CALLSIGN — One — OVER'.

7 transmits:

'(One) — (THIS IS) Seven — (ROGER) — OUT'.

VERIFICATIONS, ACKNOWLEDGEMENTS AND CANCELLATIONS

VERIFY
I VERIFY
ACKNOWLEDGE
WILCO
DISREGARD THIS TRANSMISSION

Verifications

345. When verification of all, or part, of a message, has been requested by an addressee, the originating station is to verify with the originator and send the correct version.

346. An example of verification is as follows:

5 transmits to 3:
'Three — THIS IS Five — Reference your LOCSTAT of 0800 hrs — VERIFY — OVER'.

3 transmits:
'(Five) — (THIS IS) Three — WAIT — OUT'.

The operator at 3 checks with the originator, establishes that the grid reference previously transmitted was correct, and transmits:

'Five — THIS IS Three — I VERIFY LOCSTAT — Alfa Charlie Zulu Yankee Golf Hotel Echo — OVER'.

5 transmits:
'(Three) — (THIS IS) Five — (ROGER) — OUT'.

347. When a message to a number of addressees is queried by one station and found to be incorrect, the corrected version is to be sent to all addressees, as shown in the following example:

1 transmits to 6:
'Six — THIS IS One — Reference your 'Orders' — VERIFY WORD AFTER report to — OVER'.

6 transmits:
'(One) — (THIS IS) Six — WAIT — OUT'.

The operator at 6 checks the message with the originator and finds that the word after 'report to' should have been 'STARLIGHT' instead of 'SUNRAY'. He therefore transmits a correction to all the original addressees:

'One — Five — THIS IS Six — Reference my 'Orders' — CORRECTION(1) WORD AFTER report to — STARLIGHT — OVER'.

Note:

1. I VERIFY cannot be used in this case because a correction is necessary.

1 transmits:
'(Six) — (THIS IS) One — (ROGER) — OUT'.
5 transmits:
'(Six) — (THIS IS) Five — (ROGER) — OUT'.

348. When the receiving station finds difficulty in understanding an encoded message, having decoded it, the procedure is as follows:

7 transmits the following encoded message to 6:
'Six — THIS IS Seven — CRYPTO MESSAGE — OVER'.

6 transmits:
'(Seven) — (THIS IS) Six — (SEND YOUR MESSAGE) — OVER'.

7 transmits:
'(Six) — (THIS IS) (Seven) (CRYPTO MESSAGE) — Alfa Bravo Charlie — Foxtrot Golf Alfa — Lima Charlie Delta — Xray Yankee Delta — Charlie Delta Xray — Foxtrot Lima Golf — Charlie Oscar Lima — Mike Papa Golf — (FIGURES) — Eight Slant Zero Seven — OVER'.

6 transmits:
'(Seven) — (THIS IS) (Six) — (ROGER) — OUT'.

6 finds difficulty in understanding the message when decoding, and transmits:
'Seven — THIS IS Six — Reference your (FIGURES) — Eight Slant Zero Seven — VERIFY group five — OVER'.

7 transmits:
'(Six) — (THIS IS) Seven — WAIT OUT.

The operator at 7 refers the request for verification to the originator, who checks the encoding and finds the fifth group incorrect; that is, CDX should read CDY. 6 transmits:

'Six — THIS IS Seven — Reference my (FIGURES) Eight Slant Zero Seven — CORRECTION — Group five — Charlie Delta Yankee — OVER'.

6 transmits:
'(Seven) — (THIS IS) Six — (ROGER) — OUT'.

Acknowledgement of Messages

349. An acknowledgement should not be confused with a reply or receipt. A prompt reply referring to the message may serve in lieu of an acknowledgement. It is the prerogative of the originator to request an acknowledgement to a message from any, or all, addressees. If an acknowledgement is desired, the request for acknowledgement is

normally included in the text of that message. If the message has been transmitted the request for acknowledgement is to constitute a new message. Acknowledgements are originated only by the addressee to whom the request for acknowledgement was made. Note particularly in this case that WILCO may only be authorized by the officer who can comply with the acknowledged message. Other uses of the proword WILCO are given in Chapters 4 and 5.

350. Example of Acknowledge Procedure is as follows:

5 transmits a message to 3 and desires an acknowledgement:

'Three — THIS IS Five — Search area (FIGURES) Five — ACKNOWLEDGE — OVER'.

3 transmits:

'(Five) — (THIS IS) Three — (ROGER) — (WAIT) OUT'.

The operator at 3, having shown the message to the commanding officer, or his duly authorized representative, and having been ordered to acknowledge the message by him, transmits:

'Five — THIS IS Three — Reference your search message — WILCO — OUT'.

351. It is often necessary to ensure that information passing between two stations on a net is brought to the attention of other stations on the same net. This is done by using the proword ACKNOWLEDGE in the case of immediate transmissions, and ACKNOWLEDGE followed by an identification of the message concerned in the event of any delay.

352. Examples of acknowledgements are as follows:

a. *Example 1,* immediate acknowledgement:

3 transmits:

'One — THIS IS Three — Bridge blown — no signs of enemy — OVER'.

1 transmits:

'(Three) — (THIS IS) One — (ROGER) — OUT TO YOU — Five — THIS IS One — ACKNOWLEDGE — OVER'.

5 transmits:

'(One) — (THIS IS) Five — (ROGER) — OUT'.

b. *Example 2,* delayed acknowledgement:

3 transmits:

'One — THIS IS Three — Bridge blown — no signs of enemy — OVER'.

1 transmits:

'(Three) — (THIS IS) One — (ROGER) — OUT'.

Some time later, 1 wants 5 to acknowledge the bridge report and transmits:

'Five — THIS IS One — ACKNOWLEDGE Bridge report from CALLSIGN 3 — OVER'.

5 transmits:

'(One) — (THIS IS) Five — (ROGER) — OUT'.

353. If 5 has not heard the bridge report he would reply 'Report not received'. 1 would then repeat the transmission and obtain a receipt.

Cancelling Transmissions and Messages

354. During the transmission of a message and prior to the transmission of the ending signs OVER or OUT, the transmission may be cancelled by the use of the proword DISREGARD THIS TRANSMISSION — OUT. This is illustrated in the following example:

During the transmission of a message, a station realizes that the transmission is being sent in error and cancels it.

3 transmits to 6:

'Six — THIS IS Three — Begin unloading at (FIGURES) One Two Three Zero hours — Proceed — DISREGARD THIS TRANSMISSION — OUT'.

355. A message which has been completely transmitted may only be cancelled by another message.

356. Cancellation of messages is illustrated in the following examples:

a. *Example 1,* cancelling an immediate past transmission:

3 transmits to 6:

'Six — THIS IS Three — Cancel my last transmission — OVER'.

6 transmits:

'(Three) — (THIS IS) Six — (ROGER) — OUT'.

b. *Example 2,* cancelling a previous transmission:

3 transmits to 6:

'Six — THIS IS Three — Cancel my bridge report (SHELREP, message (FIGURES) Eight Slant Zero Seven, etc) — OVER'.

6 transmits:

'(Three) — (THIS IS) Six — (ROGER) — OUT'.

DO NOT ANSWER

DO NOT ANSWER

Do Not Answer Procedure

357. When it is imperative that called stations do not answer a transmission, the proword DO NOT ANSWER is to be transmitted immediately following the call, and the complete transmission is sent twice. The full transmission ends with the proword OUT, as illustrated in the following example:

7 transmits to 3:

'Three — THIS IS Seven — DO NOT ANSWER — Act in accordance with plan (I SPELL) Charlie — I SAY AGAIN — Three — THIS IS Seven — DO NOT ANSWER — Act in accordance with plan (I SPELL) Charlie — OUT'.

CHAPTER 4

PROCEDURES FOR DIFFICULT WORKING CONDITIONS

DELEGATING AND ASSUMING CONTROL

ASSUME CONTROL I AM ASSUMING CONTROL WILCO

Delegating Control

401. It may be necessary for control to be delegated to a substation when effective control cannot be maintained by the NCS, or when the NCS has to leave the net for any reason. In such cases the proword ASSUME CONTROL is to be used, as illustrated in the following example:

The NCS is closing down for 30 minutes and decides that substation 5 is in the best position to assume control. He then transmits:

'Raider — THIS IS One — Closing down for (FIGURES) three Zero minutes — Five — ASSUME CONTROL — OVER'.

All stations reply in order:

'(One) — (THIS IS) Three — (ROGER) — OUT'.

'(One) — (THIS IS) Five — WILCO — OUT'.

'(One) — (THIS IS) Six — (ROGER) — OUT'.

'(One) — (THIS IS) Seven — (ROGER) — OUT'.

402. In the example in Paragraph 401 WILCO is used by Callsign 5 because he is the operator (addressee) who must comply with the instructions from the NCS. In the following sections WILCO is used by operators when instructed by the NCS or senior substation, to perform an operating function.

Assuming Control

403. Other occasions may arise when the NCS is not in a position to give warning that he is leaving the net. In such cases the senior substation will normally assume control, but, before he does so he must confirm that control cannot be heard by the other stations on the net.

404. An example of the senior substation assuming control is as follows:

Nothing has been heard from the NCS for some time. Substation 3 as senior substation transmits:

'Raider — THIS IS Three — Have you heard anything from Callsign One — OVER'.

There is no reply from the NCS and the other substations transmit:

'(Three) — (THIS IS) Five — No — OVER'.
'(Three) — (THIS IS) Six — No — OVER'.
'(Three) — (THIS IS) Seven — No — OVER'.

3 then transmits:

'(Raider) — (THIS IS) Three — (ROGER) — I AM ASSUMING CONTROL — OVER'.

Substations reply in order:

'(Three) — (THIS IS) Five — (ROGER) — OUT'.
'(Three) — (THIS IS) Six — (ROGER) — OUT'.
'(Three) — (THIS IS) Seven — (ROGER) — OUT'.

RELAY PROCEDURE

RELAY THROUGH RELAY TO . . . FROM . . . THROUGH ME

Relay Procedure

405. If communications between any two stations fail, messages may be sent through a third station that is in touch with both of them. The following examples illustrate the procedure used:

a. *Example 1*, a message from the NCS to a substation relayed by another station, showing all calls and assuming that the last transmission by the NCS to the required station was satisfactory:

Serial	*Callsign Sabine Raider 1*	*Callsign Sabine Raider 5*	*Callsign Sabine Raider 7*	*Remarks*
(a)	(b)	(c)	(d)	(e)
1.	Five — THIS IS One — Move Now — OVER.			NCS has a message for 5.
2.		No reply.		
3.	Five — THIS IS One — OVER.			NCS transmits an abbreviated offer.
4.		No reply.		
5.	Sabine Raider Five — THIS IS Sabine Raider One — OVER.			NCS transmits again using full callsigns.
6.		No reply.		
7.	Seven — THIS IS One — RELAY TO Five — OVER.			NCS then requests Callsign 7 to relay his message to 5. RELAY TO is a request in this case. If Callsign 7 knows that he is in contact with 5 he would accept the message. If he does not know, then he would reply as shown.
8.			(One) — (THIS IS) Seven — WAIT — OUT TO YOU — Five — THIS IS Seven — OVER.	
9.		(Seven) — (THIS IS) Five — OVER.		
10.			(Five) — (THIS IS) (Seven) — WAIT — OUT TO YOU — One — THIS IS Seven — (SEND YOUR MESSAGE) — OVER.	Callsign 7 accepts the message for Callsign 5.
11.	(Seven) — (THIS IS) One — RELAY TO Five — Move Now — OVER.			

(a)	(b)	(c)	(d)	(e)
12.			(One) — (THIS IS) Seven — (ROGER) — OUT TO YOU — Five — THIS IS Seven — FROM One — Move Now — OVER.	Callsign 7 receipts the message and relays it.(1)
13.		(Seven) — (THIS IS) Five — (ROGER) — OUT.		Transmission ends.

b. *Example 2,* a message from one station to another that is out of radio range and can only be contacted by relaying through a third station that is known to be in contact with the required station. Note that in this procedure the proword RELAY TO is used in the first transmission as an order:

Serial	*Callsign Sabine Raider 3*	*Callsign Sabine Raider 6*	*Callsign Sabine Raider 7*	*Remarks*
(a)	(b)	(c)	(d)	(e)
1.		Three — THIS IS Six — RELAY TO Seven — Move Now — OVER.		Callsign 6 has a message for 7 which must be relayed through 3.
2.	(Six) — (THIS IS) Three — (ROGER) — OUT TO YOU — Seven — THIS IS Three — FROM Six — Move now — OVER.			
3.			(Three) — (THIS IS) Seven — (ROGER) — OUT.	Transmission ends.

c. *Example 3.* Example of a station having difficulty contacting another. A third station who is in contact with the required

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Note:

1. Because the originating station has heard the relaying station transmit the message he will assume that it was received. The relaying station must inform the originating station if no receipt is obtained for the message.

station, indicates that he is prepared to relay the message by using the proword THROUGH ME:

Serial	*Callsign Sabine Raider 5*	*Callsign Sabine Raider 6*	*Callsign Sabine Raider 7*	*Remarks*
(a)	(b)	(c)	(d)	(e)
1.	Six — THIS IS Five — Move Now — OVER.			Callsign 5 has a message for 6.
2.		No reply.		
3.	Six — THIS IS Five — OVER.			Callsign 5 then transmits an abbreviated offer.
4.		No reply.		
5.	Sabine Raider Six —THIS IS Sabine Raider Five — OVER.			Callsign 5 repeats the offer using full callsigns.
6.		No reply.		
7.			Five — THIS IS Seven — THROUGH ME — OVER.	Callsign 7 volunteers to relay the message.
8.	(Seven) — (THIS IS) Five — (ROGER) — RELAY TO Six — Move Now — OVER.			
9.			(Five) — (THIS IS) Seven — (ROGER) — OUT TO YOU — Six THIS IS Seven — FROM Five — Move Now — OVER.	
10.		(Seven) — (THIS IS) Six — (ROGER) — OUT.		
				Transmission ends.

d. *Example 4.* Example of the NCS indicating a station which can relay the message:

Serial	*Callsign Sabine Raider 1 (NCS)*	*Callsign Sabine Raider 3*	*Callsign Sabine Raider 5*	*Callsign Sabine Raider 6*	*Remarks*
(a)	(b)	(c)	(d)	(e)	(f)
1.			Six — THIS IS Five — Move Now — OVER.		Callsign 5 has a message for 6.
2.				No reply.	
3.	Five — THIS IS One — RELAY THROUGH Three — OUT.				NCS directs 5 to relay through 3.
4.			Three — THIS IS Five — RELAY TO Six — Move Now — OVER.		
5.		(Five) — (THIS IS) Three — (ROGER) — OUT TO YOU — Six — THIS IS Three — FROM Five — Move now — OVER.			
6.				(Three) — (THIS IS) Six — (ROGER) — OUT.	
					Trans-mission ends.

406. See Paragraph 443 for a further example of Relay Through Procedure.

USE OF FULL PROCEDURE AND FULL CALLSIGNS

USE FULL PROCEDURE USE ABBREVIATED PROCEDURE USE FULL CALLSIGNS USE ABBREVIATED CALLSIGNS

Full Procedure

407. When conditions deteriorate to such a degree that the use of abbreviated procedure is causing unnecessary repetitions, the NCS is to order the use of full procedure. The use of prowords, and callsigns in one to one transmissions, that were previously optional, then becomes mandatory.

408. An example of full procedure using abbreviated callsigns is as follows:

The NCS transmits:

'Raider — THIS IS One — USE FULL PROCEDURE — OVER'.

Each station answers in turn using full procedure:

'One — THIS IS Three — WILCO — OUT'.
'One — THIS IS Five — WILCO — OUT'.
'One — THIS IS Six — WILCO — OUT'.
'One — THIS IS Seven — WILCO — OUT'.

Reverting to Abbreviated Procedure

409. When conditions return to normal, the NCS is to order that the net revert to abbreviated procedure.

410. An example of abbreviated procedure using abbreviated callsigns is as follows:

The NCS transmits:

'Raider — THIS IS One — USE ABBREVIATED PROCEDURE — OVER'.

Each station answers in turn using abbreviated procedure:

'(One) — (THIS IS) Three — (WILCO) — OUT'.
'(One) — (THIS IS) Five — (WILCO) — OUT'.
'(One) — (THIS IS) Six — (WILCO) — OUT'.
'(One) — (THIS IS) Seven — (WILCO) — OUT'.

Full Callsigns

411. When conditions deteriorate and/or confusion arises through the use of abbreviated callsigns, the NCS may order that full callsigns be used. Full callsigns may be used with either full or abbreviated procedure.

412. Examples of ordering the use of full callsigns are as follows:

a. *Example 1,* ordering the use of full callsigns when full procedure is in force:

The NCS transmits:

'Sabine Raider — THIS IS Sabine Raider One — USE FULL CALLSIGNS — OVER'.

Each station answers in turn using full callsigns while continuing to use full procedure:

'Sabine Raider One — THIS IS Sabine Raider Three — WILCO — OUT'.

'Sabine Raider One — THIS IS Sabine Raider Five — WILCO — OUT'.

'Sabine Raider One — THIS IS Sabine Raider Six — WILCO — OUT'.

'Sabine Raider One — THIS IS Sabine Raider Seven — WILCO — OUT'.

b. *Example 2,* ordering the use of full callsigns when abbreviated procedure is in force:

The NCS transmits:

'Sabine Raider — THIS IS Sabine Raider One — USE FULL CALLSIGNS — OVER'.

Each station answers in turn using full callsigns but continuing to use abbreviated procedure:

'(Sabine Raider One) — (THIS IS) Sabine Raider Three — (WILCO) — OUT'.

'(Sabine Raider One) — (THIS IS) Sabine Raider Five — (WILCO) — OUT'.

'(Sabine Raider One) — (THIS IS) — Sabine Raider Six — (WILCO) — OUT'.

'(Sabine Raider One) — (THIS IS) Sabine Raider Seven — (WILCO) — OUT'.

Abbreviated Callsigns

413. When conditions have returned to normal, the NCS is to order the net to revert to the use of abbreviated callsigns. When ordered to use abbreviated callsigns, the net must continue to use either full or abbreviated procedure, whichever is in force.

414. An example of ordering the use of abbreviated callsigns when full procedure is in force is as follows:

The NCS transmits:

'Raider — THIS IS One — USE ABBREVIATED CALLSIGNS — OVER'.

Each station answers in turn using abbreviated callsigns, but continuing to use full procedure:

'One — THIS IS Three — WILCO — OUT'.
'One — THIS IS Five — WILCO — OUT'.
'One — THIS IS Six — WILCO — OUT'.
'One — THIS IS Seven — WILCO — OUT'.

Full Procedure and Full Callsigns

415. Conditions may be such that the NCS considers the use of both full procedure and full callsigns necessary for the efficiency of the net. In this case he will direct the net as shown in the following example:

The NCS transmits:

'Sabine Raider — THIS IS Sabine Raider One — USE FULL CALLSIGNS and FULL PROCEDURE — OVER'.

Each station answers in turn:

'Sabine Raider One — THIS IS Sabine Raider Three — WILCO — OUT'.
'Sabine Raider One — THIS IS Sabine Raider Five — WILCO — OUT'.
'Sabine Raider One — THIS IS Sabine Raider Six — WILCO — OUT'.
'Sabine Raider One — THIS IS Sabine Raider Seven — WILCO — OUT'.

416. When conditions warrant it, the NCS may subsequently order the net to use abbreviated procedure or abbreviated callsigns as shown in the examples in Paragraphs 410 and 414 or the NCS may order the net to abbreviate entirely by using the prowords USE ABBREVIATED CALLSIGNS and ABBREVIATED PROCEDURE.

READ BACK

READ BACK
I READ BACK
CORRECT
WRONG

General

417. Read back procedure is used when a sender wishes to ensure that his message has been received correctly. This is necessary when

the text is very complicated or accuracy is of particular importance, or when sending station is WEAK to one or more of the receiving stations. The station instructed to read back should be either the one to which it is most important or the weakest receiving station.

Corrections and Repetitions

418. Repetitions are to be requested in the normal way, but all corrections and repetitions given by the sender must be read back.

Use of Read Back Procedure

419. If it is desired that a message be read back, the proword READ BACK is to be transmitted immediately following the call, READ BACK is also used in conjunction with a catchword or proword when only a portion of a message is to be read back.

420. Examples of Read Back Procedure are as follows:

a. *Example 1*, full message:

3 transmits to 7:

'Seven — THIS IS Three — MESSAGE — OVER'.

7 transmits:

'(Three) — (THIS IS) Seven — (SEND YOUR MESSAGE) — OVER'.

3 transmits:

'(Seven) — (THIS IS) (Three) — READ BACK — Convoy has arrived at GRID — Xray Zulu Papa Romeo Delta Alfa Charlie — OVER'.

7 transmits:

'(Three) — (THIS IS) (Seven) — I READ BACK — (Seven) — (THIS IS) (Three) — READ BACK — Convoy has arrived at GRID — Xray Zulu Papa Romeo Delta Alfa Charlie — OVER'.

3 transmits:

'(Seven) — (THIS IS) (Three) — CORRECT — OUT'.

b. *Example 2*, text only:

5 transmits to 6:

'Six — THIS IS Five — MESSAGE — OVER'.

6 transmits:

'(Five) — (THIS IS) Six — (SEND YOUR MESSAGE) — OVER'.

5 transmits:

'(Six) — (THIS IS) (Five) — READ BACK text — Convoy has arrived at GRID — Xray Zulu Papa Romeo Delta Alfa Charlie — OVER'.

6 transmits:

'(Five) (THIS IS) (Six) — I READ BACK text — Convoy has arrived at GRID — Xray Zulu Papa Romeo Delta Alfa Charlie — OVER'.

5 transmits:

'(Six) — (THIS IS) (Five) — CORRECT — OUT'.

421. The proword READ BACK, when not preceded by identifying callsigns, means that all stations are to read back. In cases other than a single call, when not all of the stations represented in the call are required to read back, the station, or stations concerned are to be specified by transmitting the appropriate callsigns before the proword READ BACK. When the order to read back is given, only those stations so directed are to read back. The remaining stations called are to remain silent, unless directed by the calling station to receipt.

422. Further examples of Read Back Procedure are as follows:

a. *Example 1,* multiple call:

Serial	*Callsign Sabine Raider 3*	*Callsign Sabine Raider 5*	*Callsign Sabine Raider 6*	*Callsign Sabine Raider 7*
(a)	(b)	(c)	(d)	(e)
1.	Five — Six — Seven — THIS IS Three — MESSAGE — OVER.			
2.		(Three) — (THIS IS) Five — (SEND YOUR MESSAGE) — OVER.		
3.			(Three) — (THIS IS) Six — (SEND YOUR MESSAGE) — OVER.	
4.				(Three) — (THIS IS) Seven — (SEND YOUR MESSAGE) — OVER.
5.	(Five) — (Six) — (Seven) — (THIS IS) Three — Six READ BACK Text — Convoy has arrived at GRID — Xray Zulu Papa Romeo Delta Alfa Charlie — OVER.			

(a)	(b)	(c)	(d)	(e)
6.			(Three) — (THIS IS) Six — I READ BACK Text — Convoy has arrived at GRID — Xray Zulu Papa Romeo Delta Alfa Charlie — OVER.	
7.	(Six) — (THIS IS) Three — CORRECT Seven — OVER.			
8.		(Three) — (THIS IS) Five — (ROGER) — OUT.		
9.				(Three) — (THIS IS) Seven — (ROGER) — OUT.

b. *Example 2,* use of proword WRONG:
If, in Example 1, 6 had read back incorrectly, 3 would call attention to the error by using the proword WRONG, followed by the correct version:

Serial	*Callsign Sabine Raider 3*	*Callsign Sabine Raider 5*	*Callsign Sabine Raider 6*	*Callsign Sabine Raider 7*
(a)	(b)	(c)	(d)	(e)
1.			(Three) — (THIS IS) Six — I READ BACK Text — Convoy has arrived at GRID — Xray Zulu Bravo Romeo Delta Alfa Charlie — OVER.	
2.	(Six) — (THIS IS) Three — WRONG — WORD AFTER Zulu — Papa — OVER.			
3.			(Three) — (THIS IS) Six — I READ BACK — WORD AFTER Zulu — Papa — OVER.	
4.	(Six) — (THIS IS) Three — CORRECT — Seven — OVER.			
5.		(Three) (THIS IS) Five — ROGER — OUT.		
6.				(Three) — (THIS IS) Seven — (ROGER) — OUT.

WORDS TWICE

WORDS TWICE

General

423. When communication is difficult, callsigns should be transmitted twice. Phrases, words, or groups to be transmitted twice are indicated by use of the proword WORDS TWICE. Reception may be verified by use of the proword READ BACK. Under these conditions messages are to be offered and full procedure used. The use of full callsigns is optional and will be directed by the NCS as necessary.

424. Examples of Words Twice Procedure are as follows:

a. *Example 1,* plain language text:

5 transmits:

'One — One — THIS IS Five — THIS IS Five — MESSAGE — MESSAGE — OVER — OVER'.

1 transmits:

'Five — Five — THIS IS One — THIS IS One — SEND YOUR MESSAGE — SEND YOUR MESSAGE — OVER — OVER'.

5 transmits:

'One — One — THIS IS Five — THIS IS Five — WORDS TWICE — WORDS TWICE — Convoy has arrived — Convoy has arrived — OVER — OVER'.

1 transmits:

'Five — Five — THIS IS One — THIS IS One — SAY AGAIN TEXT — SAY AGAIN TEXT — OVER — OVER'.

5 transmits:

'One — One — THIS IS Five — THIS IS Five — I SAY AGAIN — I SAY AGAIN — Convoy has arrived — Convoy has arrived — OVER — OVER'.

1 transmits:

'Five — Five — THIS IS One — THIS IS One — ROGER — ROGER — OUT — OUT'.

b. *Example 2,* code group text:

Having already made a preliminary call, 3 transmits:

'Six — Six — THIS IS Three — THIS IS Three — WORDS TWICE — WORDS TWICE (CRYPTO MESSAGE) — (CRYPTO MESSAGE) — Alfa Zulu Xray — Alfa Zulu Xray — Charlie Mike Delta — Charlie Mike Delta — India Papa Yankee — India Papa Yankee — (FIGURES) — Three Slant One Two — (FIGURES) — Three Slant One Two — OVER — OVER'.

6 transmits:

'Three — Three THIS IS Six — THIS IS Six — ROGER — ROGER — OUT — OUT'.

RETRANSMISSION

CHANGE TO CHANGE NOW

General

425. Retransmission is a facility incorporated in current VHF FM radios that enables a signal received on one radio to be automatically retransmitted through a second set on a different frequency. This facility is used to maintain communications with one or more stations that may be out of range, or shielded, from other stations on the net. The retransmission station may be deployed in anticipation of the requirement, or it may be established at relatively short notice.

Retransmission Procedure

426. If the requirement for retransmission has been anticipated, this fact will be stated in an operation order. A station that requires the facility merely changes to the frequency advised for retransmission. It does not have to state that it is now using the facility and no special procedure is involved.

427. If prior arrangements to set up a retransmission station have not been made the following procedure is to be adopted:

a. The retransmission station is set up at a site which allows communications to be established to the difficult station(s), as well as to the remainder of the stations on the net.

b. The retransmission station orders the difficult station to change frequency. The retransmission frequency and the callsign of the retransmission station are normally published in SOIs or unit operation orders.

c. The retransmission station then arranges interconnection of its two radios and advises all stations that retransmission is now in use.

428. When retransmission is employed it is often necessary to pause slightly between operating the press-to-talk switch and beginning to speak.

429. When retransmission is no longer required, the station being retransmitted changes to the frequency of the other stations and operates normally. The NCS then orders the retransmission station to close down. Other than CHANGE TO and CHANGE NOW, special prowords are not required for this procedure.

430. An example of Retransmission Procedure is as follows:

7 is unsatisfactory and is to be retransmitted. 9 is the callsign of the retransmission station. The net is operating on frequency R126 and the frequency for retransmission is P713. Sabine Raider is the net callsign, the frequency used is shown in brackets.

9 transmits:

'Sabine Raider Seven — THIS IS Sabine Raider Nine — OVER'. (R126)

7 transmits:

'(Sabine Raider Nine) — (THIS IS) Sabine Raider Seven — OVER'. (R126)

9 transmits:

'(Sabine Raider Seven) — (THIS IS) (Sabine Raider Nine) — CHANGE TO — Papa Seven One Three — OVER'. (R126)

7 transmits:

'(Sabine Raider Nine) — (THIS IS) (Sabine Raider Seven) — (WILCO) — OVER'. (R126)

9 transmits:

'(Sabine Raider Seven) — (THIS IS) (Sabine Raider Nine) — CHANGE NOW — OUT'. (R126)

7 changes to P713 and waits for the call from the second set of callsign 9.

9 transmits:

'Sabine Raider Seven — THIS IS Sabine Raider Nine — OVER'. (P713)

7 transmits:

'(Sabine Raider Nine) — (THIS IS) Sabine Raider Seven — OVER'. (P713)

9 transmits:

'(Sabine Raider Seven) — (THIS IS) (Sabine Raider Nine) — OUT'. (P713)

9 now arranges the interconnection of his two radios and transmits a net call:

'Sabine Raider — THIS IS Sabine Raider Nine — This net is being retransmitted — OUT'. (R126) and (P713).

431. Figure 14 shows a net using retransmission facility.

NET USING RETRANSMISSION FACILITY

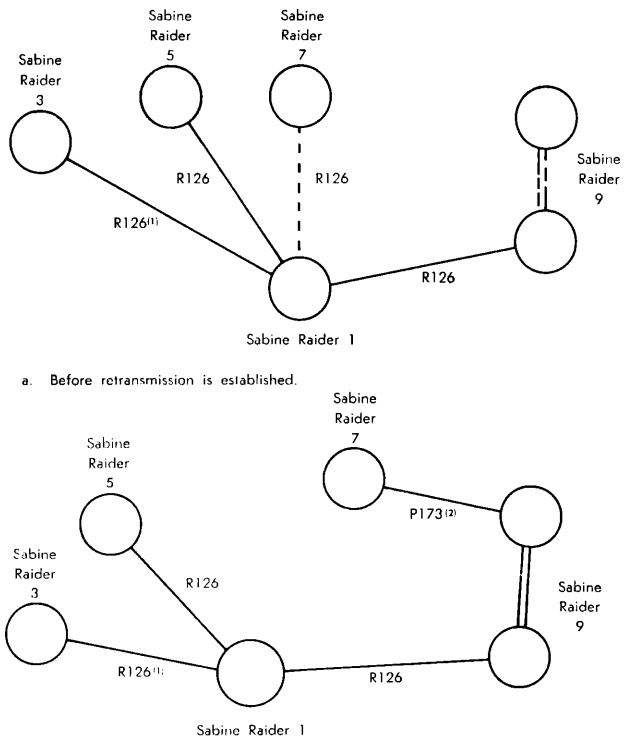


Figure 14

Notes:

1. Net frequency R126.
2. Retransmission frequency P173.

FREE AND DIRECTED NETS

THIS IS A DIRECTED NET THIS IS A FREE NET

Free Net

432. Under normal conditions a net is free and control will not intervene in direct communication between substations, whether a message is offered or not (See Chapter 3).

Directed Net

433. When conditions are difficult or the flow of traffic heavy, Control may order the net to be directed. Thereafter, all messages between substations must be offered. Control is the first to answer these offers, and is therefore able to regulate all traffic on the net.

Prowords

434. The prowords to be used for changing the state of the net are as follows:

a. THIS IS A DIRECTED NET.

b. THIS IS A FREE NET.

435. Examples of Control ordering a directed net and a free net are as follows:

a. *Example 1,* directed net.
Because of difficult working conditions the NCS decides that the net should be directed, and transmits using full callsigns:
'Sabine Raider — THIS IS Sabine Raider One — THIS IS A DIRECTED NET — OVER'.
All stations then answer in turn.
If the reason for the NCS deciding that the net is to be directed is because the flow of traffic is heavy, he would normally continue to use abbreviated callsigns.

b. *Example 2,* free net.
When conditions on the net improve, the NCS transmits:
'Raider — THIS IS One — THIS IS A FREE NET — OVER'.
All stations then acknowledge the transmission in turn.

Replies by Control When a Net is Directed

436. When a message has been offered by one substation to another on a directed net, Control can say:

a. SEND YOUR MESSAGE (SITREP, SHELREP, etc) — OUT.
b. WAIT OUT.
c. THROUGH ME — OVER.
d. RELAY THROUGH . . . — OUT.

437. SEND YOUR . . . — OUT indicates that control has given permission for the particular message to be sent and will take no further part in the transmission. This is illustrated in the following example:

7 offers a situation report to 6:

'Six — THIS IS Seven — SITREP — OVER'.

Control transmits:

'Seven — THIS IS One — SEND YOUR SITREP —OUT'.

6 then indicates he is ready to receive the message:

'(Seven) — (THIS IS) Six — (SEND YOUR SITREP) — OVER'.

7 transmits:

'(Six) — (THIS IS) (Seven) — Now at TOP HAT — No contact — OVER'.

6 transmits:

'(Seven) — (THIS IS) (Six) — (ROGER) — OUT'.

438. WAIT OUT indicates that the substation must wait until he is given permission by the NCS to carry on with his transmission. This is illustrated in the following example:

5 offers a message to 3:

'Three — THIS IS Five — (MESSAGE) — OVER'.

As more urgent traffic is to be disposed of the NCS transmits:

'Five — THIS IS One — WAIT OUT'.

When the more urgent traffic has been disposed of, the NCS transmits:

'Five — THIS IS One — SEND YOUR MESSAGE — OUT'.

5 then offers the message to 3:

'Three — THIS IS Five — (MESSAGE) — OVER'.

3 transmits:

'(Five) — (THIS IS) Three — (SEND YOUR MESSAGE) — OVER'.

5 transmits:

'(Three) — (THIS IS) (Five) — Have reached BOWLER HAT — OVER'.

3 transmits:

'(Five) — (THIS IS) (Three) — (ROGER) — OUT'.

439. THROUGH ME Procedure is used when conditions between substations are unsatisfactory, although the NCS is in contact with both of them. Once the NCS has ordered this procedure he assumes complete responsibility for the delivery of the message, and may send it by any means available.

440. The NCS is to:

a. Give a receipt for the message.

b. Check whether the addressee has overhead the message.

c. Retransmit the message if not received by the addressee; or, if the addressee has received part of the message, send corrections.

d. Ensure delivery by other means if radio communications are not possible.

441. Example of 'Through Me' Procedure is as follows:

6 offers a message to 3:

'Three — THIS IS Six — (MESSAGE) — OVER'.

Control transmits to 6:

'Six — THIS IS One — THROUGH ME — OVER'.

6 transmits:

'(One) — (THIS IS) Six — Have reached BOWLER HAT — OVER'.

Control transmits:

'(Six) — (THIS IS) (One) — (ROGER) — OUT TO YOU — Three — THIS IS One — Did you receive message from Six — OVER'.

3 transmits:

'(One) — (THIS IS) Three — No — OVER'.

Control transmits:

'(Three) — (THIS IS) (One) — FROM Six — Have reached BOWLER HAT — OVER'.

3 transmits:

'(One) — (THIS IS) (Three) — (ROGER) — OUT'.

442. RELAY THROUGH Procedure is used when a substation offers Control a message for another substation which is out of communication with both the calling station and Control.

443. Example of 'Relay Through' Procedure is as follows:

3 transmits to 5:

'Five — THIS IS Three — (MESSAGE) — OVER'.

Control transmits to 3:

'(Three) — (THIS IS) One — RELAY THROUGH Six — OUT'.

3 transmits to 6:

'Six — THIS IS Three — RELAY TO Five — . . . etc'.

3 then sends the message to 5 via substation 6 using normal Relay Procedure (see Paragraph 405).

ANNEX A TO CHAPTER 4

PROWORDS

Unless otherwise indicated, the following prowords are authorized for Combined, Joint and AMF working:

Serial	*Prowords*	*Reference to Chapter*	*Meaning*
(a)	(b)	(c)	(d)
1.	ACKNOWLEDGE (ACK)	3	a. Instruction to a station on the net to acknowledge that it has heard a message which was not specifically addressed to it. (Not used in combined or joint working.)
		3	b. When used in the text of a message; an instruction to the addressee that the message must be acknowledged.
2.	ADDRESS GROUP	2	The group that follows is an address group.
3.	ALL AFTER	3	The portion of the message to which I have reference is all that which follows . . .
4.	ALL BEFORE	3	The portion of the message to which I have reference is all that which precedes . . .
5.	ANSWER AFTER	5	The station called is to answer after callsign . . . when answering transmissions.
6.	ASSUME CONTROL	4	You will assume control of this net until further notice.
7.	AUTHENTICATE	5	The station called is to reply to the challenge which follows.
8.	AUTHENTICATION IS	7	In combined or joint working. The transmission authentication of this message is . . . (used only when a self-authentication system is in force).
9.	BREAK	6	Separative sign used to indicate the beginning and the ending of the text in formal messages.
10.	CALLSIGN	2	That which follows is a callsign.
11.	CHANGE NOW	4 and 5	Change frequency now . . .
12.	CHANGE TO	4 and 5	Change frequency to . . .
13.	CLEAR	3	The readability of your signals is of excellent quality.
14.	CLOSE DOWN	5	Stations called are to close down when indicated. Acknowledgements are required.

ANNEX A

(a)	(b)	(c)	(d)
15.	CORRECT	4	You are correct, or, what you have transmitted is correct.
16.	CORRECTION	3	a. An error has been made in this transmission. The message will continue with the last word correctly transmitted. b. An error has been made in this transmission (or message indicated). The correct version is . . . c. That which follows is a corrected version in answer to your request for verification.
17.	DISREGARD THIS TRANSMISSION	3	This transmission is in error. Disregard it. This proword shall not be used to cancel any message that has been completely transmitted and for which receipt or acknowledgement has been received.
18.	DISTORTED	3	Having trouble reading you because your signal is distorted.
19.	DO NOT ANSWER	3	Stations called are not to answer this call, receipt for this message, or otherwise transmit in connection with this transmission. When this proword is employed the transmission must be ended with the proword OUT.
20.	EXECUTE	7	Carry out the purport of the message or signal to which this applies. To be used only with the 'Executive' method.
21.	EXECUTE TO FOLLOW	7	Action on the message or signal which follows is to be carried out upon receipt of the proword EXECUTE. To be used only with the 'Delayed Executive' method.
22.	EXEMPT	2 and 6	The addressee(s) immediately following are exempted from the collective or net call.
23.	FADING	3	At times your signal strength fades to such an extent that continuous reception cannot be relied upon.
24.	FETCH	5	The person indicated is to be called to the set. This proword is not to be supplemented with appointments titles in combined working, unless working exclusively with armies of Commonwealth countries.
25.	FIGURES	3	Figures or numerals follow.
26.	FLASH	6	Precedence FLASH.
27.	FORMAL MESSAGE	6	Formal message of precedence indicated follows.

ANNEX A

(a)	(b)	(c)	(d)
28.	FROM	4 and 6	The originator of this message is indicated by the address designator immediately following.
29.	FROM . . . TO . . .	3	The portion of the message to which I have reference is all that which appears between the groups indicated by the words FROM and TO.
30.	GOOD	3	Your signal strength is good.
31.	GRID	3	The portion following is a grid reference.
32.	GROUPS	6	This message contains the number of groups indicated by the numeral following.
33.	GROUPS NO COUNT	6	The groups in this message have not been counted.
34.	I AM ASSUMING CONTROL	4	I am assuming control of this net until further notice.
35.	I AUTHENTICATE	5	The group that follows is the reply to your challenge to authenticate.
36.	IMMEDIATE	6	Precedence IMMEDIATE.
37.	IMMEDIATE EXECUTE	7	Action on the message or signal following is to be carried out on receipt of the word EXECUTE. To be used only with the 'Executive' method.
38.	INFO	6	The addressees immediately following are addressed for information.
39.	INTERFERENCE	3	Having trouble reading you due to interference.
40.	I READ BACK	4	The following is my response to your instruction to read back.
41.	I SAY AGAIN	3	I am repeating transmission or portion indicated.
42.	I SPELL	3	I shall spell the next word phonetically.
43.	I VERIFY	3	That which follows has been verified at your request and is repeated. To be used only as a reply to VERIFY.
44.	LONG MESSAGE	3	The message which follows is long and I will transmit it using Long Message Procedure. This proword is not used in combined or joint working.
45.	LOUD	3	Your signal strength is very strong.

ANNEX A

(a)	(b)	(c)	(d)
46.	MESSAGE	3	A message which requires recording is about to follow. Transmitted immediately after the call. This proword is not used on nets primarily employed for conveying messages. It is intended for use when messages are passed on tactical or reporting nets.
47.	MORE TO FOLLOW	7	a. Transmitting station has additional traffic for the receiving station.
		3	b. Used in AMF working only when using Long Message Procedure, to indicate that a further portion of the message follows when the transmission is resumed.
48.	NEGATIVE (NEGAT)	7	Cancel message(s) sent by the 'Delayed Executive' method. NEGAT may be used to cancel a single message, or a group of messages, awaiting execution.
49.	NET NOW	3	All stations are to net their radios on the unmodulated carrier wave which I am about to transmit.
50.	NOTHING HEARD	3	To be used when no reply is received from a called station.
51.	NUMBER	6	Station serial number follows.
52.	OUT	2	This is the end of my transmission to you and no answer is required or expected.
53.	OUT TO YOU	3	Used in AMF working only, to indicate that this is the end of my transmission to you and no answer is required or expected. I am about to call another station immediately. No other station is to transmit in the meantime.
54.	OVER	2	This is the end of my transmission to you and a response is necessary. Go ahead and transmit.
55.	PRIORITY	6	Precedence PRIORITY.
56.	RADIO CHECK	3	What is my signal strength and readability; that is, how do you hear me?
57.	READABLE	3	The readability of your signals is satisfactory.
58.	READ BACK	4	Repeat this entire transmission (or portion indicated) back to me exactly as received.
59.	REBROADCAST YOUR NET	7	Link the two nets under your control for automatic rebroadcast. Used in combined working only.

ANNEX A

(a)	(b)	(c)	(d)
60.	RELAY THROUGH	4	Relay your message through callsign . . .
61.	RELAY TO	4	Transmit this message to all addressees (or addressees immediately following this proword). When this proword is used to relay formal messages in AMF working, or any message in combined working, the address component of the message is mandatory.
62.	RE-NET	3	You are off frequency. I am about to transmit another unmodulated carrier and you are required to re-net. Not to be used in combined working.
63.	REQUEST TIME CHECK	5	I wish to synchronize time. Please transmit a time check.
64.	ROGER	2	a. As an answer to normal transmissions — I have received your last transmission satisfactorily.
		3	b. As an answer to a Radio Check — I have received your last transmission satisfactorily. The omission of comment on signal strength and readability is understood to mean that reception is loud and clear.
65.	ROUTINE	6	Precedence ROUTINE.
66.	SAY AGAIN	3	Repeat all of your last transmission. Followed by identification data means 'Repeat . . . (that portion indicated)'.
67.	SEND YOUR . . .	2	I am ready to receive your . . . (message, BOMBREP, MORTREP, SITREP, etc). Used only in reply to the offer of a message, etc, on tactical or reporting nets.
68.	SERVICE	6	The message that follows is a service message.
69.	SILENCE (repeated three times)	5	Cease transmissions on this net immediately. Silence will be maintained until lifted. When a self-authentication system is in force the transmission imposing silence is to be authenticated. If a self-authentication system is not available, the transmission is to be authenticated by use of a code word.
70.	SILENCE LIFTED	5	Silence is lifted. When a self-authentication system is in force the transmission lifting silence is to be authenticated. If a self-authentication system is not available, the transmission is to be authenticated by use of a code word.

ANNEX A

(a)	(b)	(c)	(d)
71.	SPEAKING	5	. . . is speaking.
72.	SPEAK SLOWER	3	Your transmission is at too fast a speed. Reduce speed of transmission.
73.	STOP REBROADCASTING	7	Cut the automatic link between the two nets that are being rebroadcast and revert to normal working. Used in combined working only.
74.	THIS IS	2	This transmission is from the station whose address designator immediately follows.
75.	THIS IS A DIRECTED NET	4	From now until further notice this net is directed.
76.	THIS IS A FREE NET	4	From now until further notice this net is free.
77.	THROUGH ME	4	Relay your message through me.
78.	TIME	6	a. When passing a formal message. That which immediately follows is the time or date-time group of the message.
		5	b. When synchronizing time. The time now is . . .
79.	TIME CHECK	5	The time will be . . . hours when I transmit the proword TIME. Used when answering a request for a time check.
80.	TIME CHECK AT	5	The time will be . . . hours when I transmit the proword TIME. Used when the NCS initiates a time check.
81.	TO	6	The addressees immediately following are addressed for action.
82.	UNKNOWN STATION	3	The identity of the station with whom I am attempting to establish communitions is unknown.
83.	UNREADABLE	3	The quality of your signal is so bad that I am unable to read you.
84.	USE ABBREVIATED CALLSIGNS	4	Until further notice callsigns are to be abbreviated.
85.	USE ABBREVIATED PROCEDURE	4	As conditions are normal, all stations are to use abbreviated procedure until further notice.
86.	USE FULL CALLSIGNS	4	Until further notice callsigns are to be sent in full.
87.	USE FULL PROCEDURE	4	As conditions are not normal, all stations are to use full procedure until further notice.

ANNEX A

(a)	(b)	(c)	(d)
88.	VERIFY	3	Verify entire message (or portion indicated) with the originator and send correct version. To be used only at the discretion of, or by, the addressee to which the questioned message was directed.
89.	VERY WEAK	3	Your signal strength is very weak.
90.	WAIT	2	a. In combined and joint working — I must pause for a few seconds. b. In AMF working — I must pause for up to a maximum of five seconds. No other station is to transmit during this pause. c. When used in conjunction with OUT TO YOU, means I will contact you later on this subject.
91.	WAIT — OUT	2	a. In combined and joint working — I must pause longer than a few seconds. b. In AMF working — I must pause (you must wait) for more than five seconds. Any station is free to transmit unless otherwise indicated in this transmission or by the prevailing circumstances, such as a directed net. c. You must wait until called again.
92.	WEAK	3	Your signal strength is weak.
93.	WILCO	3	I have received your signal, understood it and will comply. To be used only by the addressee. Since the meaning of ROGER is included in that of WILCO, the two prowords are never used together.
94.	WORD AFTER	3	The word of the message to which I have reference is that which follows . . .
95.	WORD BEFORE	3	The word of the message to which I have reference is that which precedes . . .
96.	WORDS TWICE	4	Communication is difficult. Transmit (ting) each phrase (or each code group) twice. This proword may be used as an order, request, or as information.
97.	WRONG	4	Your last transmission was incorrect. The correct version is . . .

ANNEX B TO CHAPTER 4

PROSIGNS AND OPERATING SIGNALS

1. Prosigns and operating signals have been designed to speed up the transmission of standard communication phrases, particularly in radiotelegraphy (morse). They consist of single letters or groups of letters which are occasionally suffixed by figures. Groups beginning with the letters 'Q' or 'Z' are operating signals.

2. As they are internationally used and are included in the basic training of most operators, they could be of value in radiotelephony when language difficulties arise.

3. The following rules govern the transmission of prosigns and operating signals in radiotelephony:

a. They are to be preceded by the words 'prosign' or 'operating signal' as applicable.

b. The Prosign $\overline{\text{INT}}$ is to be given its prosign equivalent, that is, INTERROGATIVE. All other prosigns and operating signals are to be spelt out by use of the phonetic equivalents. The prowords I SPELL and FIGURES need not be used.

c. Where a line is shown above a prosign, it is to be supplemented by the word 'barred'.

4. Examples of prosigns and operating signals as spoken in radiotelephony are as follows:

a. QRM — Operating Signal Quebec Romeo Mike.

b. XMT — Prosign Xray Mike Tango.

c. $\overline{\text{INT}}$ ZUA — Operating Signal INTERROGATIVE Zulu Uniform Alfa.

d. QRK3 — Operating Signal Quebec Romeo Kilo Three.

e. $\overline{\text{AR}}$ — Prosign Alfa Romeo Barred.

5. Appendix 1 lists prowords showing their prosign and operating signal equivalents, if any.

Appendix 1. Prowords and their Prosign or Operating Signal Equivalents.

APPENDIX 1 TO
ANNEX B TO
CHAPTER 4

PROWORDS AND THEIR PROSIGN OR OPERATING SIGNAL EQUIVALENTS

PROWORD	*EQUIVALENT*
ACKNOWLEDGE	$\overline{\text{INT}}$ ZEV
ADDRESS GROUP	
ALL AFTER	AA
ALL BEFORE	AB
ANSWER AFTER	ZGO
ASSUME CONTROL	ZKD
AUTHENTICATE	$\overline{\text{INT}}$ ZNB
AUTHENTICATION IS	ZNB
BREAK	BT
CALLSIGN	
CHANGE NOW	QSY
CHANGE TO	QSY . . .
CLEAR	QRK5
CLOSE DOWN	ZKJ
CORRECT	C
CORRECTION	C
DISREGARD THIS TRANSMISSION	EEEEEEEE $\overline{\text{AR}}$
DISTORTED	ZPA
DO NOT ANSWER	F
EXECUTE	$\overline{\text{IX}}$ (5 sec dash)
EXECUTE TO FOLLOW	$\overline{\text{IX}}$
EXEMPT	XMT
FADING	QSB
FETCH	$\overline{\text{INT}}$ ZUK
FIGURES	
FLASH	Z
FORMAL MESSAGE	ZDA

APPENDIX 1

PROWORD	*EQUIVALENT*
FROM	FM
FROM ... TO ...	FM . . . TO . . .
GOOD	QSA4
GRID	
GROUPS	GR
GROUPS NO COUNT	GRNC
I AM ASSUMING CONTROL	ZKA
I AUTHENTICATE	ZNB
IMMEDIATE	O
IMMEDIATE EXECUTIVE	$\overline{IX}$
INFO	INFO
INTERFERENCE	QRM
I READ BACK	
I SAY AGAIN	$\overline{IMI}$
I SPELL	
I VERIFY	C
LONG MESSAGE	ZBF
LOUD	QSA5
MESSAGE	ZBO
MORE TO FOLLOW	B
NET NOW	ZRC2
NOTHING HEARD	ZGN
NUMBER	NR
OUT	$\overline{AR}$
OUT TO YOU	$\overline{AR}$
OVER	K
PRIORITY	P
RADIO CHECK	$\overline{INT}$ QSA $\overline{INT}$ QRK
READABLE	QRK3
READ BACK	G
REBROADCAST YOUR NET	
RELAY THROUGH	ZOK

APPENDIX 1

PROWORD	*EQUIVALENT*
RELAY TO	T or ZOF
RE-NET	
REQUEST TIME CHECK	$\overline{\text{INT}}$ ZUA
ROGER	R
ROUTINE	R
SAY AGAIN	$\overline{\text{IMI}}$
SEND YOUR	K
SERVICE	SVC
SILENCE	$\overline{\text{HM}}$ $\overline{\text{HM}}$ $\overline{\text{HM}}$
SILENCE LIFTED	ZUG $\overline{\text{HM}}$ $\overline{\text{HM}}$ $\overline{\text{HM}}$
SPEAKING	ZUK
SPEAK SLOWER	QRS
STOP REBROADCASTING	
THIS IS	DE
THIS IS A DIRECTED NET	ZKB
THIS IS A FREE NET	ZUG ZKB
THROUGH ME	ZOE
TIME	QTR
TIME CHECK	ZUA
TIME CHECK AT	ZUA at
TO	TO
UNKNOWN STATION	$\overline{\text{AA}}$
UNREADABLE	QRK1
USE ABBREVIATED CALLSIGNS	
USE ABBREVIATED PROCEDURE	
USE FULL CALLSIGNS	
USE FULL PROCEDURE	
VERIFY	J
VERY WEAK	QSA1
WAIT	$\overline{\text{AS}}$
WAIT OUT	$\overline{\text{AS}}$ $\overline{\text{AR}}$
WEAK	QSA2

APPENDIX 1

PROWORD	*EQUIVALENT*
WILCO	
WORD AFTER	WA
WORD BEFORE	WB
WORDS TWICE	QSZ
WRONG	ZWF

CHAPTER 5

NORMAL COMMUNICATION DRILLS

ARRANGING A RADIOTELEPHONE CONVERSATION

FETCH SPEAKING

General

501. The user can speak to a nominated individual at another station by calling the person concerned to the set. The user is to arrange this by telling his operator the radio appointment title of the individual to whom he wishes to speak; for example, 'I want to speak to SUNRAY CALLSIGN 3', or, if the appointment title can be dispensed with, 'I want to speak to an officer at CALLSIGN 3'. This procedure is only to be used within the AMF and when working with other Commonwealth Armies.

Fetch

502. The operator is then to call the distant station and say, 'FETCH SUNRAY', or 'FETCH officer'. If SUNRAY is not near the set the distant operator replies with WAIT OUT and must send an orderly to find him.

Speaking

503. When the nominated individual has come to the set and is ready to begin the conversation he is to give his identity, for example, 'SUNRAY SPEAKING'. The user at the calling station is then to give his identity, for example, 'SEAGULL SPEAKING' and then start his message or conversation.

504. An example of the use of FETCH and SPEAKING is as follows:

A 'G' Staff officer at substation 3 wishes to speak to the commander at substation 5. The operator transmits:

'FIVE — THIS IS Three — FETCH SUNRAY — OVER'.

The operator at 5 transmits:

'(Three) — (THIS IS) Five — WAIT OUT'.

After SUNRAY has been fetched, 5 transmits:

'Three — THIS IS Five — SUNRAY SPEAKING — OVER'.

The 'G' Staff officer at 3 transmits:

'(Five) — (THIS IS) Three — SEAGULL SPEAKING — Can I adopt BOLONEY now — OVER'.

SUNRAY at 5 replies:

'(Three) — (THIS IS) (Five) — Yes — OUT'.

505. Radio Appointment Titles are shown in Table 9 (see Chapter 7).

AUTHENTICATION

AUTHENTICATE I AUTHENTICATE

Authentication

506. When authentication is required, it is to be done in accordance with the prescribed authentication system. The types of authentication are as follows:

a. *Challenge.* Used by the called station or NCS when authenticity of calling station is in doubt. An example is as follows:

1 transmits to 6:

'Six — THIS IS One — Move now — OVER'.

6, doubting the authenticity of the transmission, transmits:

'(One) — (THIS IS) Six — AUTHENTICATE Whiskey November — OVER'.

1 transmits:

'(Six) — (THIS IS) (One) — WAIT — (short pause whilst authentication is calculated) — I AUTHENTICATE Delta — OVER'.

6 transmits:

'(One) — (THIS IS) (Six) — (ROGER) — OUT'.

b. *Counter Challenge.* Used by challenged station when authenticity of challenging station is doubted. An example is as follows:

5 transmits to 3:

'Three — THIS IS Five — Send ration figures — OVER'.

3 transmits:

'(Five) — (THIS IS) Three — AUTHENTICATE Delta Tango — OVER'.

5 transmits:

'(Three) — (THIS IS) (Five) — WAIT — (short pause whilst authentication is calculated) — I AUTHENTICATE Mike — AUTHENTICATE Hotel Charlie — OVER'.

3 transmits:

'(Five) — (THIS IS) (Three) — WAIT — (short pause whilst authentication is calculated) — I AUTHENTICATE Bravo — Ration state already sent by other means — Advise if not received — OVER'.

5 transmits:

'(Three) — (THIS IS) (Five) — (ROGER) — OUT'.

Incorrect Authentication

507. The action to be taken on incorrect authentication is to be detailed in the Net Security Measures.

Self Authentication

508. Self-authentication is described in Chapter 7.

ELECTRONIC AND RADIO SILENCE — EMERGENCY SILENCE

SILENCE SILENCE LIFTED

Electronic Silence

509. Orders for the imposition of electronic silence will be issued by the senior formation, as part of the general plan, and are to include comprehensive instructions covering:

a. its extent;

b. the time of its imposition;

c. code words for lifting and emergency breaking;

d. circumstances in which, and by whom, it may be lifted, or broken;

e. details of self-authentication system, if in use;

f. whether lifting and/or breaking is to be progressive or total; and

g. other relevant information.

510. All orders are to be distributed by secure means in advance and no executive order in connection with the imposition of electronic silence is to be passed by code word, or in clear, over the radio.

511. Code words may, however, be used in clear over the radio for lifting, or emergency breaking, of electronic silence within the conditions previously ordered. The orders relating to electronic silence for a particular operation are to state whether stations are to use the code word and authenticate, or just use the code word.

512. An example of using a code word to break electronic silence is as follows:

5 has authority and good reason, within the conditions previously ordered, to break electronic silence. BINGO is the code word for emergency breaking. 5 transmits to 1:

'One — THIS IS Five — BINGO — Enemy tanks breaking through on my right — OVER'.

1 transmits:

'(Five — (THIS IS) One — (ROGER) — OUT'.

513. The action to be taken to report an emergency break on one net and the arrangements for ordering a progressive, or total, lifting of silence on other nets is to be laid down in orders.

514. All stations must be on their guard against attempts by the enemy to induce a break of electronic silence by false messages. On no account is silence to be broken to request authentication of a station which transmits during electronic silence, if that station has not given the proper code word or other authentication for an emergency break.

515. Once a particular code word has been used for an emergency break, it is not to be used again. Orders must include a number of code words for emergency breaks.

516. During electronic silence, radio communications equipment is to remain on listening watch, unless otherwise ordered.

Radio Silence

517. Whereas electronic silence, which covers a much wider field than radio communications, is seldom imposed on anything so small as a unit front, it is permissible for a unit or sub-unit commander to impose radio silence on the net or nets for which he is responsible.

518. Radio silence may be predetermined or may occur in an emergency. When predetermined, instructions for its imposition, lifting, breaking, etc, are to be passed by any secure means available. Emergency silence is described in Paragraphs 521 to 529.

519. Radio silence may be imposed, lifted, or broken by the use of specially selected nicknames. The following rules must be strictly adhered to:

a. Nicknames are selected at the appropriate unit or sub-unit level.

b. Nicknames must not be similar to other nicknames which may be used on the net, or nets.

c. Nicknames and their meanings must be passed by secure means; they may be classified if considered necessary.

d. Once used for imposing, lifting, or breaking radio silence, a nickname must not be used again.

e. Distribution must be on a need-to-know basis, that is, issued only to the appropriate net, or nets.

f. Orders must include a number of nicknames for each purpose.

520. The following are examples of imposing, breaking, and lifting radio silence:

a. *Example 1,* imposing radio silence:[1]

The NCS transmits to all stations:

'Raider — THIS IS One — PAPER DOLL — OVER'.

Each substation answers in turn:

'(One) — (THIS IS) Three — (WILCO) — OVER'.

'(One) — (THIS IS) Five — (WILCO) — OVER'.

'(One) — (THIS IS) Six — (WILCO) — OVER'.

'(One) — (THIS IS) Seven — (WILCO) — OVER'.

The NCS transmits:

'(Raider) — (THIS IS) One — PAPER DOLL now — OUT'.

Note:

1. This procedure cannot be distinguished from the procedures for closing down and changing frequency, when using nicknames.

b. *Example 2,* a substation breaking radio silence:(1)

Substation 5 transmits to Control:

'One — THIS IS Five — CHINA EGG — position overrun. Am moving to alternative site — OVER'.

Control answers:

'(Five) — (THIS IS) One — (ROGER) — OUT'.

c. *Example 3,* lifting radio silence for all stations on the net.

The NCS transmits:

'Raider — THIS IS One — LEATHER STRAP — OUT.

NCS allows time for sets to warm up and then re-establishes communications by a radio check.

Emergency Silence

521. Emergency (radio) silence is to be imposed or lifted only by competent authority. A station must always authenticate a transmission which:

a. imposes emergency silence;

b. lifts emergency silence; or

c. calls a station, or stations, during a period of emergency silence.

522. The authentication is achieved by use of a code word which is to be used once only. Self-authentication may be used if in force (see Chapter 7).

523. Transmissions imposing emergency silence are to be made twice and ended with the proword OUT. Stations do not acknowledge receipt of such transmissions.

524. SILENCE spoken three times means 'Cease transmissions on this net immediately. Silence is to be maintained until lifted'. It is used as follows:

a. The proword SILENCE (spoken three times) after a call means, 'Stations addressed cease all transmissions on this net immediately'.

b. The proword SILENCE (spoken three times) followed by a frequency or frequency designator means, 'Cease all transmissions immediately on frequency . . . (or that indicated by frequency designator)'.

Note:

1. The remainder of the net maintains radio silence; a break by one substation does not lift silence.

c. The proword SILENCE (spoken three times) followed by 'all nets', means, 'Cease all transmissions immediately on all nets'.

525. Examples of imposing emergency silence are as follows:

a. *Example 1,* imposing emergency silence on the net:

The NCS transmits to all stations:

'Raider — THIS IS One — SILENCE SILENCE SILENCE — HANGER — I SAY AGAIN — Raider — THIS IS One — SILENCE SILENCE SILENCE — HANGER — OUT'.

b. *Example 2,* imposing emergency silence on all nets:

The NCS at the senior formation transmits:

'Prize (net callsign) — THIS IS Ashes — SILENCE SILENCE SILENCE — All nets — TOWER — I SAY AGAIN — Prize — THIS IS Ashes — SILENCE SILENCE SILENCE — All nets — TOWER — OUT'.

526. The use of 'all nets' in Example 2 of Paragraph 525 orders all stations on the net and all nets subordinate to (Resort) Prize to cease transmission immediately. Subordinate NCS must repeat this message on their own nets using a different code word.

527. Emergency silence is lifted by use of the proword SILENCE LIFTED followed by the code word, and qualified where necessary by a frequency, a frequency designator or the phrase 'all nets'.

528. Examples of lifting emergency silence are as follows:

a. *Example 1,* lifting emergency silence for all stations on a net:

The NCS transmits:

'Raider — THIS IS One — SILENCE LIFTED — FISH — OUT'.

b. *Example 2,* lifting emergency silence for all stations on the frequency indicated by the designator C74:

The NCS transmits:

'Raider — THIS IS One — SILENCE LIFTED (I SPELL) Charlie (FIGURES) Seven Four — CHOP — OUT'.

529. When emergency silence is lifted after a prolonged period of silence, communications are to be re-established.

CHANGING FREQUENCY

General

530. Frequency changes are made for security, technical or tactical reasons.

Security Changes

531. These are pre-arranged changes intended to deceive the enemy and are organized only by higher formation. Included in this category are those arrangements which may be made by higher formation for the simultaneous changing of all frequencies in the formation at specified times or intervals.

532. Full details of security changes are to be notified in advance to all concerned and are to include the exact time at which the change is to take place. No warning transmission is made in connection with security changes which are to be effected solely on a time basis.

533. In all cases, the orders are to specify the time at which transmission on the old frequencies is to cease and may also specify a time slightly later for opening up on the new frequencies. All transmission on the old frequencies, using the old callsigns, is to cease exactly at the time specified. If no separate time has been specified, communications on the new frequencies, using new callsigns, are to be re-established as soon as possible after the time of closing down on the old frequencies.

Technical and Tactical Frequency Changes

534. These changes may be ordered because of deterioration in working conditions, or for the regrouping of forces, or other tactical reasons. Causes of deterioration in working conditions include:

a. changes in radio conditions,

b. changes in range, and

c. interference or jamming.

535. Technical and tactical frequency changes normally involve the use of spare frequencies. Frequencies within a unit's or formation's allotment are to be referred to by the frequency designator or nickname. The order to change to a given frequency is to be given by simply quoting the frequency designator, or one of the nicknames appropriate to that frequency.

536. Examples of frequency changes are as follows:

a. *Example 1,* using frequency designator:

The NCS changes the net to a new frequency using the designator B11:

'Raider — THIS IS One — CHANGE TO (I SPELL) BRAVO — (FIGURES) One One — OVER'.

Each station on the net answers in turn:

'(One) — (THIS IS) Three — (WILCO) — OVER'.

'(One) — (THIS IS) Five — (WILCO) — OVER'.

'(One) — (THIS IS) Six — (WILCO) — OVER'.

'(One) — (THIS IS) Seven — (WILCO) — OVER'.

The NCS transmits:

'(Raider) — (THIS IS) One — CHANGE NOW — OUT'.

b. *Example 2,* using a nickname:

The NCS changes the net to a new frequency using the nickname DIRTY DRAIN:

'Raider — THIS IS One — DIRTY DRAIN — OVER'.

Each station answers in turn:

'(One) — (THIS IS) Three — (WILCO) — OVER'.

'(One) — (THIS IS) Five — (WILCO) — OVER'.

'(One) — (THIS IS) Six — (WILCO) — OVER'.

'(One) — (THIS IS) Seven — (WILCO) — OVER'.

The NCS transmits:

'(Raider) — (THIS IS) One — DIRTY DRAIN now — OUT'.

CLOSING DOWN

CLOSE DOWN

General

537. No station is to close down without prior permission from the NCS. The greatest possible care must be taken by control stations never to close down a net, or an individual substation without being completely satisfied that substations know, or will know, the new frequency and time of reopening. The necessary orders are always passed by the most secure means available and, wherever possible, not by radio. In an emergency, the orders may have to be sent over the radio, in code, before the net closes down; in this case any security achieved is shortlived.

Closing Down Procedure

538. When it is essential to order a close down over the radio, and Control is satisfied regarding arrangements for reopening, he orders the net or substation to close down. He may do this by using the proword CLOSE DOWN in clear or by means of a nickname.

539. Examples of closing down procedure are as follows:

a. *Example 1,* order given in plain language:

The NCS transmits to all stations:

'Raider — THIS IS One — CLOSE DOWN — OVER'

Each substation answers in turn.

'(One) — (THIS IS) Three — (WILCO) — OVER'.
'(One) — (THIS IS) Five — (WILCO) — OVER'.
'(One) — (THIS IS) Six — (WILCO) — OVER'.
'(One) — (THIS IS) Seven — (WILCO) — OVER'.

The NCS transmits:

'(Raider) — (THIS IS) One — CLOSE DOWN now — OUT'.

b. *Example 2,* order given by use of a nickname:

The NCS transmits to all stations:

'Raider — THIS IS One — BACK ALLEY — OVER'.

Each substation answers in turn:

'(One) — (THIS IS) Three — (WILCO) — OVER'.
'(One) — (THIS IS) Five — (WILCO) — OVER'.
'(One) — (THIS IS) Six — (WILCO) — OVER'.
'(One) — (THIS IS) Seven (WILCO) — OVER'.

The NCS transmits:

'(Raider) — (THIS IS) One — BACK ALLEY now — OUT'.

TIME CHECKS

REQUEST TIME CHECK TIME CHECK TIME CHECK AT . . . TIME

Time Checks

540. If an accurate time check is required, it is to be reque ted by using the proword REQUEST TIME CHECK. The time at which the check is required may be indicated by the addition of a four figure group, normally local zone time.

541. An example of a request for a time check is as follows:

7 desires to check his clock and transmits to Control:

'One — THIS IS Seven — REQUEST TIME CHECK — OVER'.

1 transmits:

'(Seven) — (THIS IS) One — TIME CHECK One Eight Zero Two (pause) One Five seconds — One Zero seconds — Five Four Three Two One — TIME One Eight Zero Two — OVER'.

7 transmits:

'(One) — (THIS IS) (Seven) — (ROGER) — OUT'.

542. If the NCS wishes to give an accurate time check to all stations on the net, he is to pause a sufficient period of time between his warning proword and the commencement of his count-down to allow all receiving operators to prepare their watches. The NCS may announce his intention of transmitting a time check at a certain time using the proword TIME CHECK AT . . .

543. An example of a pre-arranged time check is as follows:

The NCS transmits to all stations:

'Raider — THIS IS One — TIME CHECK AT Zero Nine Three Zero — OUT'.

At 20 seconds before 0930 hours, the NCS transmits:

'Raider — THIS IS One — TIME CHECK Zero Nine Three Zero — One Five Seconds — One Zero Seconds — Five Four Three Two One — TIME Zero Nine Three Zero — OVER'.

All substations answer in turn:

'(One) — (THIS IS) Three — (ROGER) — OUT'.
'(One) — (THIS IS) Five — (ROGER) — OUT'.
'(One) — (THIS IS) Six — (ROGER) — OUT'.
'(One) — (THIS IS) Seven — (ROGER) — OUT'.

JOINING A WORKING NET

ANSWER AFTER

General

544. If a station is required to join a working net, instructions containing the necessary details should be issued beforehand to all concerned by some means other than radio.

545. **Authentication.** It is normal for the station joining a working net to be challenged and asked to authenticate, as illustrated in the following example:

Callsign Savoy Taster is joining a working net and transmits to the NCS:

'Sabine Raider One — THIS IS Savoy Taster — Reporting into net — OVER'.

The NCS transmits:

'(Savoy Taster) — (THIS IS) Sabine Raider One — (ROGER) — AUTHENTICATE Delta November — OVER'.

Savoy Taster transmits:

'(Sabine Raider One) — (THIS IS) (Savoy Taster) — WAIT (pause while authentication is worked out) — I AUTHENTICATE Xray — OVER'.

The NCS transmits:

'(Savoy Taster) — (THIS IS) — (Sabine Raider One) — (ROGER) — ANSWER AFTER Sabine Raider Seven — OVER'.

Savoy Taster transmits:

'(Sabine Raider One) — (THIS IS) (Savoy Taster) — (WILCO) — OUT'.

CHAPTER 6

FORMAL MESSAGE PROCEDURE

MESSAGES, DEGREES OF PRECEDENCE, SECURITY CLASSIFICATION

SERVICE
FLASH
IMMEDIATE
PRIORITY
ROUTINE

General

601. Although tactical radio nets are used primarily for the transmission of short operational messages and user to user conversations, they may also be used for the passage of formal messages by radiotelephony. Where possible, formal messages should be written on the message form (F Sigs 52) and, therefore, all operators are to be familiar with the form and know how the originator uses it. When formal messages are not written on the message form, the layout should conform with that of the F Sigs 52.

Types of Messages

602. **Plaindress.** A plaindress message is one in which the originator and addressee designators are indicated externally of the text. It contains all the components (unless the call serves as the address) as shown in Figure 15 and must always include the Precedence and Date-time Group.

603. **Abbreviated Plaindress.** Operational requirements for speed in handling messages may require abbreviation of plaindress headings. In such cases any, or all, of the following may be ommitted:

a. precedence,

b. date-time group, and

c. group count.

It should be noted that examples given in earlier chapters conform with this layout and are therefore abbreviated plaindress messages.

604. **Codress.** A codress message is one in which the entire address, that is originator and all addressees, including address indicating groups (AIG) when used, are encrypted within the text. The heading of such a message contains only enough information to enable communications personnel to handle it properly. It contains all other message components.

605. **Service Messages.** These are as follows:

a. A service message is one between communications personnel relating to any phase of traffic handling, communication facilities, or circuit conditions.

b. Service messages may be prepared and transmitted in plaindress, abbreviated plaindress or codress form. They generally concern messages originated at, destined for, or refiled by, the originating station and normally are assigned a precedence at least equal to that of the message to which they refer.

c. An encrypted service message is to be identified as a service message only within the encrypted text.

d. Plain language service messages are identified by the proword SERVICE, written as SVC, as the first word of the text following the security classification.

606. **Abbreviated Service Messages.** An abbreviated service message is one between operators and is normally used to facilitate message traffic handling. This type of message contains only prowords, address designators, identification of messages and amplifying data as necessary. An abbreviated service message may be transmitted using plaindress or abbreviated plaindress procedure. The proword SERVICE is optional.

607. **Classification of Service and Abbreviated Service Messages.** Rules governing the classification of service messages are as follows:

a. An unclassified service or abbreviated service message may be used when referring to a classified message if only prowords and message or transmission identification are used. If it is necessary to include anything that would reveal part of the plain language text of the classified message, the message is to be classified.

b. An unclassified service or abbreviated service message referring to a message received in codress form, or using encrypted callsigns or address groups, is to use only those message or transmission identifications which were contained in the external message heading as received.

Precedence

608. Each message is assigned a precedence by the originator to indicate the speed with which it should be handled. The degrees of precedence are:

a. FLASH,
b. IMMEDIATE,
c. PRIORITY, and
d. ROUTINE.

609. Unless the originator specifically enters a higher precedence in the 'Precedence — Info' block of the message form, precedence in relation to all information addresses is considered to be ROUTINE. Messages containing different precedences for action and information addresses are termed 'dual precedence messages.

610. **Service Messages.** The precedence given to service messages should be determined by the precedence of the message being queried and the time delay which has elapsed in correctly dealing with that message.

Allotment of Precedence

611. Rules for the use of precedences for messages are contained in *JSP (AS) 102* and *Staff Duties (Australia)* and an extract is given in Table 8. The originator is responsible for allotting a precedence consistent with the contents of the message.

TABLE 8 — RULES FOR THE USE OF PRECEDENCE

Serial	*Degree of Precedence*	*Rank or Appointment Entitled to Authorize*	*Use*
(a)	(b)	(c)	(d)
1.	ROUTINE	Any officer.	Reserved for all types of messages which are not of sufficient precedence to justify a higher precedence but must be delivered to the addressee without delay.
2.	PRIORITY	a. Commanders of Units. b. All staff officers. c. Adjts. d. Any signal officer but only on messages affecting inter-communication.	Reserved for important messages which must have precedence over routine traffic. This is normally the highest precedence which may be assigned to messages of an administrative nature.
3.	IMMEDIATE	a. Commanders not below the rank of lt col. b. Staff officers and heads of services not below the rank of lt col.	Reserved for important tactical messages pertaining to the operation in progress, or for important administrative messages having an immediate bearing on tactical operations; and when necessary, those messages concerning the immediate movement of ships, aircraft or ground forces. This precedence is only to be used when the value of a message is dependent upon expeditious delivery to the addressees.

(a)	(b)	(c)	(d)
4.	FLASH	a. Comds and GOC in C. b. Members of the Military Board. c. Specially designated commanders.	Reserved for short messages about vital emergency situations.

612. In cases of operational emergency, it may be necessary for an originator to allot a precedence which is not normally authorized for his use. Where this occurs, the originator must be prepared to justify his use of such a precedence.

Security Classification

613. Any message that contains information which may be of value to the enemy must be classified by the originator under one of the four following categories (abbreviations are not to be used):

a. TOP SECRET.
b. SECRET.
c. CONFIDENTIAL.
d. RESTRICTED.

614. If the contents of a message are of no value to the enemy, the message is sent as UNCLASSIFIED which is abbreviated to UNCLAS. UNCLAS must be inserted by the originator.

MESSAGE FORMAT

FORMAL MESSAGE
NUMBER
FROM
TO
INFO
EXEMPT
GROUPS
GROUPS NO COUNT
TIME
BREAK

Message Parts

615. Each message prepared in either plaindress, abbreviated plaindress or codress form is to consist of:

a. a heading,
b. a text, and
c. an ending.

616. Each message 'Part' has certain 'Components' which are broken down into 'Elements' and 'Contents'. All 'Parts' and a majority of the 'Components' and 'Elements' have a standardized arrangement, or order of appearance, which is applicable not only to radiotelephone procedure, but also to other operating procedures.

Schematic Diagram of Message Format

617. In the Schematic Diagram, shown in Figure 15, it should be noted that every 'Element' is indicated in order of appearance in the message but the 'Contents' of the various 'Elements' are not necessarily indicated as they will appear.

618. Format Lines 2, 3, 4, 14, 15 and 16 identify the procedural portion of the basic message format as designed for radiotelephone operation. Lines 5 to 13 are non-changeable 'Elements' of the basic format. All format lines do not necessarily appear in every message but, when used, are to be in the order indicated.

Explanation of Format Lines

619. **Format Lines 2 and 3.** These lines contain the call, the proword FORMAL MESSAGE and the transmission identification as follows:

a. *The Call.* The call of a message serves to identify the stations between which a particular message is being transmitted. It may also serve as the address of the message when the designators of the originators and addressees are the same as the callsigns of the stations in communication with each other on the same net. Details of types of calls and conditions under which calls may be abbreviated are contained in Chapter 2.

b. *Formal Message.* The proword FORMAL MESSAGE is to be transmitted after the call for all formal messages which have not at first been offered. Within the AMF such messages are restricted to those being transmitted using DO NOT ANSWER procedure. In all other cases the proword is optional.

c. *Transmission Identification.* A transmission identification is not normally used on voice nets but, if required, is to be the last 'Element' of format Lines 2 and 3 and is to consist of the station serial number preceded by the proword NUMBER.

620. **Format Line 4.** This line contains the transmission instructions which may consist of prowords DO NOT ANSWER, RELAY (TO), READ BACK or WORDS TWICE. The use of these prowords is explained in Chapters 3 and 4.

621. **Format Line 5.** This line contains the precedence, date-time group and message instructions:

a. *Precedence.* The appropriate precedence designation is transmitted as the first 'Element' of format Line 5. In the case of 'dual precedence' messages, the higher precedence designation is to be transmitted first.

b. *Date-time Group.* The proword TIME followed by the date-time group and zone suffix is transmitted immediately after the precedence designation. An abbreviated plaindress message may carry no date-time group or the date-time group may be replaced by a time group transmitted in format Line 14.

c. *Message Instructions.* Message instructions should not normally be required on radiotelephone messages. When included, they are to consist of short and concise instructions which accompany the message to the station of destination for example, 'this message is a suspected duplicate'.

622. **Format Lines 6, 7, 8 and 9.** These lines form the address of the message and are recognized by the prowords FROM, TO, INFO and EXEMPT respectively. When the originator and the addressee stations are in communication with each other on the same net the call may serve as the address and, therefore, Lines 6, 7, 8 and 9 would not be used.

623. **Format Line 10.** This line is identified by the proword GROUPS and may contain an accounting symbol and group designation as follows:

a. *Accounting Symbol.* Some communication agencies charge a fee for relaying messages through their networks. In order that financial responsibility can be ascertained, an accounting symbol consisting of a combination of letters is allocated to agencies, services and activities. Such symbols are not used by the Australian Services and any appearing on messages received from other agencies are to be ignored.

b. *Group Count.* Within the AMF, group counts are to be used only on codress messages and plaindress messages in which the full text is encoded. When the instructions for use of a specific code or cipher require the transmission of a group count as the last group of the text, it is not to be transmitted in format Line 10. If a message is to be transmitted before the group count is determined, the proword GROUPS NO COUNT is to be used in lieu of the group count. The actual group count may then be transmitted in the final instructions and inserted in the message prefix by the receiving operator.

624. **Format Line 11.** This line contains the proword BREAK separating the text from the heading. It is used only when confusion is likely between the heading and the text.

625. **Format Line 12.** This is the text of the message and contains:

a. the security classification,

b. the proword SERVICE or the originator's number (when used),

c. internal instructions, and

d. the thoughts or ideas expressed by the originator.

626. **Format Line 13.** This line contains the proword BREAK separating the text from the ending. It is used only when confusion between the text and ending is likely.

627. **Format Line 14.** This line is used only in abbreviated plain-dress messages when a time group transmitted here takes the place of a date-time group in Line 5. It consists of the proword TIME followed by the time group plus the zone suffix.

628. **Format Line 15.** This line contains any final instructions. It is identified by the prowords WAIT or CORRECTION, and an indication of the number and precedence of messages still to be transmitted to the station(s) called.

629. **Format Line 16.** This line is identified by the prowords OVER or OUT. Every transmission is to end with one of these prowords, except that the proword OVER may be omitted when two stations are in continuous communication with each other on a net not shared by a third station and provided that confusion cannot arise. In all transmissions where the proword DO NOT ANSWER is used, the transmission is to be ended with the proword OUT.

SCHEMATIC DIAGRAM OF MESSAGE FORMAT

Parts	*Components*	*Elements*	*Format Line*	*Contents*
(a)	(b)	(c)	(d)	(e)
H.	Procedure	a. Call	1	Not used in radio — telephone procedure.
			2 and 3	Stations called; proword EXEMPT; exempted calls; proword THIS IS; station calling.
E.		b. Message follows		Prowords MESSAGE, LONG MESSAGE or FORMAL MESSAGE.
		c. Transmission identification		Proword NUMBER and station serial number (if applicable).
A.		d. Transmission instructions	4	Prowords RELAY TO, READ BACK, DO NOT ANSWER, WORDS TWICE; operating signals; address groups; callsigns; plain language designators.
D.	Preamble	a. Precedence; date-time group; message instructions	5	Precedence designation; proword TIME; date and time expressed in digits and zone suffix and abbreviated month and year; operating signals and proword EXECUTE TO FOLLOW.
I.	Address	a. Originator's sign; originator	6	Proword FROM; originator's address designator.
		b. Action addressee sign; action addressee	7	Proword TO; action addressee designator.
N.		c. Information addressee sign; information adressee	8	Proword INFO; information addressee designator.
		d. Exempted addressee sign; exempted addressee	9	Proword EXEMPT; exempted addressee designator.
G.	GR	a. Group count	10	Groups count; proword GROUPS (GROUP NO COUNT).
SEPARATION			11	Proword BREAK.
T E X T	Text	a. Subject matter	12	Security classification when required; proword SERVICE; originator's number; internal instructions; thought or idea as expressed by originator.
SEPARATION			13	Proword BREAK.
E N D	Procedure	a. Time group	14	Proword TIME. Hours and minutes expressed in digits and zone suffix, when appropriate.
I N G		b. Final instructions	15	Prowords WAIT, CORRECTION, MORE TO FOLLOW; station designators.
		c. Ending sign	16	Prowords OVER, OUT.

Figure 15

TRANSMISSIONS

General

630. Examples given in this section cover only those procedures which have not been covered elsewhere in the pamphlet, or have been included elsewhere but require more detailed explanation in relation to formal messages.

631. The Example Net shown in Annex A to this Chapter is used for all examples in this Chapter.

Checking Page Copies

632. Before offering a message, the operator is to scrutinize the page copy to ensure that no significant components have been omitted and that no security breach will result from its transmission. The most common security breach is the transmission of unit names in clear.

Offering

633. Formal messages are always to be offered except when DO NOT ANSWER procedure is being used. Included in the offer is:

a. the degree of precedence;

b. the proword FORMAL MESSAGE amplified to LONG FORMAL MESSAGE when long message procedure is to be used; and

c. any additional information which may aid the receiving operator, such as the requirement for additional copies when the message has to be delivered to more than one addressee by the receiving station.

Sending

634. The operator is to send the message as prepared for transmission using the procedures shown in the following examples. (Abbreviated callsigns are assumed to be in use in all cases unless otherwise stated.):

a. *Example 1*, a multi-addressed plaindress message incorporating a collective callsign (see Figure 16):

Serial	*Piston*	*Gates*	*Oven*	*Ashes*	*Remarks*
(a)	(b)	(c)	(d)	(e)	(f)
1.	Jug EXEMPT Raider — THIS IS Piston — PRIORITY LONG FORMAL MESSAGE — OVER.				Message is for all stations less Aching Mill, Silent Ghost and Sabine Raider.
2.		(Piston) — (THIS IS) Gates— (SEND YOUR MESSAGE) — OVER.			
3.			(Piston) — (THIS IS) Oven — (SEND YOUR MESSAGE) — OVER.		
4.				(Piston) — (THIS IS) Ashes — (SEND YOUR MESSAGE) — OVER.	
5.	(Jug EXEMPT Raider) — (THIS IS) Piston — PRIORITY — ROUTINE — TIME One Two One Six Three Zero Zulu Feb 70 — FROM Hollow Piston — TO Milky Ashes — Bald Gates — INFO Brassy Oven — (BREAK) — UNCLAS — (I SPELL) Alfa Quebec — (FIGURES) Five				

(a)	(b)	(c)	(d)	(e)	(f)
	Six — Padres Hour — Full Stop — Padres will visit your areas — during period (FIGURES) One Four slant One Five Feb (or [I SPELL] Foxtrot Echo Bravo) — MORE TO FOLLOW — OVER.				
6.		(Piston) — (THIS IS) Gates— (ROGER) — OVER.			The called stations have no queries on the portion of the message received.
7.			(Piston) — (THIS IS) Oven — (ROGER) — OVER.		
8.				(Piston) — (THIS IS) Ashes — (ROGER) — OVER.	
9.					Five-esecond pause
10.	(Jug EXEMPT Raider) — (THIS IS) Piston — Feb — Full stop — Advise numbers of (I SPELL) Romeo Charlie — and (I SPELL) Oscar Papa Delta — who will be available — to attend Padres hour — on these dates — (BREAK) — (I have a further) ROUTINE (FORMAL MESSAGE) for Oven — OVER.				

(a)	(b)	(c)	(d)	(e)	(f)
11.		(Piston) — (THIS IS) Gates — (ROGER) — OUT.			
12.			(Piston) — (THIS IS) Oven — (ROGER) — (SEND YOUR MESSAGE) — OVER.		
13.				(Piston) — (THIS IS) Ashes — (ROGER) — OUT.	
14.					Five-second pause followed by transmission of the routine formal message from Hollow Piston to Brassy Oven.

6 – 15

LONG FORMAL MESSAGE

MESSAGE FORM

Note: Shaded areas are for Commcen/Sigs use only.

CM 109
F Sigs 52–1
A 224
Revised Dec 70

LINE 1
LINE 2 *Jug - XMT Raider*
LINE 3 *THIS IS Piston*
LINE 4
LINE 5

SECURITY CLASSIFICATION AND SPECIAL HANDLING INSTRUCTIONS: *UNCLAS*

PRECEDENCE – ACTION	PRECEDENCE – INFO	DATE – TIME GROUP	MESSAGE INSTRUCTIONS
PRIORITY	ROUTINE	*121630Z May 70*	

ROUTING INDICATORS: *Piston Ashes Gates Oven*

FROM: *12 TF*

TO: *36 RAR*

(WRITE ONLY ONE ADDRESSEE PER LINE)
37 RAR

CITE/DIG/ORIG NO: *AQ56*

GP

INFO 12 Fd Regt

Padre Hours.

Padres will visit your areas during period 14/15 Feb.

Advise members of RC and OPD who will be available to attend Padres hour on these dates.

REFERS TO MESSAGE	PAGE NO	DRAFTER'S NAME AND TITLE	PHONE NO	REF FILE NO	DATE
No	*1*	*I T SMITH SC(A)*	*27*	*842/R12/2*	*12 May 70*

CLASSIFIED	NO OF PAGES	RELEASER'S NAME AND TITLE	SIGNATURE
YES ☐ NO ☐	*1*	*B A MORON DAAG*	*B A MORON*

FOR OPS LINE	R	DATE	TIME	SYSTEM	OPERATOR	D	DATE	TIME	SYSTEM	OPERATOR
							12/5	*1645*	*Voice*	*DJ*

SECURITY CLASSIFICATION: *UNCLAS*

Figure 16

b. *Example 2,* a single address plaindress message with the call serving as the address (see Figure 17):

Hollow Piston has an immediate formal message for Sabine Raider. He transmits:

'Raider — THIS IS Piston — IMMEDIATE FORMAL MESSAGE) — OVER'.

The called station replies:

'(Piston) — (THIS IS) Raider — (SEND YOUR MESSAGE) — OVER'.

Hollow Piston transmits:

'Raider — THIS IS Piston — (FORMAL MESSAGE) IMMEDIATE — TIME One Five Zero Zero Four Three Zulu Feb 70 — (BREAK) — UNCLAS (I SPELL) Golf (FIGURES) One Two — Our (I SPELL) Golf (FIGURES) Nine — Full Stop — Expedite Reply (BREAK) — OVER'.

Sabine Raider receipts the message:

'(Piston) — (THIS IS) Raider — (ROGER) — OUT'.

c. *Example 3,* a multi-addressed plaindress message with the call serving as the address. An information address is included (see Figure 18):

Silent Ghost has a routine formal message for Bald Gates and Milky Ashes. He transmits:

'Gates — Ashes — THIS IS Ghost — ROUTINE FORMAL MESSAGE — OVER'.

The called stations answer:

'(Ghost) — (THIS IS) Gates — (SEND YOUR MESSAGE) — OVER'.
'(Ghost) — (THIS IS) Ashes — (SEND YOUR MESSAGE) — OVER'.

Silent Ghost transmits his message:

'Gates — INFO Ashes — THIS IS Ghost — ROUTINE — TIME Three One Zero Zero Zero One Zulu Jan 70 — (BREAK) — UNCLAS (I SPELL) Golf (FIGURES) Four Two — Search area TANGO to

6 – 17

IMMEDIATE FORMAL MESSAGE

MESSAGE FORM

Note: Shaded areas are for Commcen/Sigs use only.

CM 109
F Sigs 52–1
A 224
Revised Dec 70

LINE 1
LINE 2 *Raider*
LINE 3 *THIS IS Piston*
LINE 4
LINE 5

SECURITY CLASSIFICATION AND SPECIAL HANDLING INSTRUCTIONS: *UNCLAS*

PRECEDENCE – ACTION	PRECEDENCE – INFO	DATE – TIME GROUP	MESSAGE INSTRUCTIONS
IMMEDIATE	ROUTINE	*150043Z May 70*	

ROUTING INDICATORS: *Piston* / *Raider*

FROM: *12 TF*

TO: *38 RAR*

(WRITE ONLY ONE ADDRESSEE PER LINE)

CITE/DIG/ORIG NO: *G12*

OR

Our G9

Expedite reply

REFERS TO MESSAGE	PAGE NO	DRAFTER'S NAME AND TITLE	PHONE NO	REF FILE NO	DATE
Yes	*1*	*N BROWN GSO 2*	*15*	*65/R14/7*	*15 May 70*

CLASSIFIED	NO OF PAGES	RELEASER'S NAME AND TITLE	SIGNATURE
YES ☐ NO ☐	*1*	*N BROWN GSO 2*	*N Brown*

FOR OPR LINE	R	DATE	TIME	SYSTEM	OPERATOR	O	DATE	TIME	SYSTEM	OPERATOR	SECURITY CLASSIFICATION
							13/5	*0048*	*Voice*	*BJ*	*UNCLAS*

Figure 17

ROUTINE FORMAL MESSAGE

MESSAGE FORM

Note: Shaded areas are for Commcen/Sigs use only.

CM 109
F Sigs 52–1
A 224
Revised Dec 70

Line 1	
Line 2 *Gates - Ashes*	SECURITY CLASSIFICATION AND SPECIAL HANDLING INSTRUCTIONS: *UNCLAS*
Line 3 *THIS IS Ghost*	
Line 4	
Line 5	

PRECEDENCE – ACTION	PRECEDENCE – INFO	DATE – TIME GROUP	MESSAGE INSTRUCTIONS
ROUTINE	ROUTINE	*310001Z May 70*	

ROUTING INDICATORS
Ghost
Ashes
Gates

FROM *12 TF Comd*
TO *36 RAR*
(WRITE ONLY ONE ADDRESSEE PER LINE)

CITE/DIG/ORIG NO: *G42*

OR

INFO 37 RAR

Search area TANGO to commence as scheduled.
Details of your G35 agreed.

REFERS TO MESSAGE	PAGE NO	DRAFTER'S NAME AND TITLE	PHONE NO	REF FILE NO	DATE
Yes	*1*	*BT MURRAY GSO 3*	*16*	*67/R12/9*	*31 May 70*

CLASSIFIED	NO OF PAGES	RELEASER'S NAME AND TITLE	SIGNATURE
YES ☐ NO ☐	*1*	*T B GREEN Comd*	*TB Green*

FROM GPS LINE	R	DATE	TIME	SYSTEM	OPERATOR	ID	DATE	TIME	SYSTEM	OPERATOR	SECURITY CLASSIFICATION
							31/5	*0830*	*Voice*	*F.M.*	*UNCLAS*

Figure 18

commence as scheduled Full Stop — Details of your (I SPELL) Golf (FIGURES) Three Five agreed — (BREAK) — OVER'.

The called stations receipt the message:

'(Ghost) — (THIS IS) Gates — (ROGER) — OUT'.

'(Ghost) — (THIS IS) Ashes — (ROGER) — OUT'.

Note: When the call serves as the address, a full call is mandatory even though a preliminary call may have been used to ascertain that the called stations were ready to receive.

d. *Example 4*, a single address plaindress message using DO NOT ANSWER procedure. Hollow Piston has a formal message for Sabine Raider.

He transmits:

'Raider — THIS IS Piston — FORMAL MESSAGE — DO NOT ANSWER — PRIORITY — TIME Two Two One Three One Zero Zulu Mar 70 — FROM Hollow Piston — TO Sabine Raider — (BREAK) — UNCLAS — 'Text' . . . — (BREAK) I SAY AGAIN — Raider — THIS IS Piston — FORMAL MESSAGE — DO NOT ANSWER — PRIORITY — TIME Two Two One Three One Zero Zulu Mar 70 — FROM Hollow Piston — TO Sabine Raider — (BREAK) — UNCLAS — 'Text' . . . — (BREAK) — OUT'.

Repetitions

635. When a repetition of the heading of a message is required, the request may be for all the heading preceding a proword, or for a portion of the heading between any two prowords. Requests for repetitions and replies thereto must include the nearest proword(s) following, or preceding and following, the portion requested.

Example:

After receiving an answer from Aching Mill to his offer of a formal message, the NCS transmits:

'(Mill) — (THIS IS) Piston — PRIORITY — TIME One Eight One Six Two Five Zulu Mar 70 — FROM Hollow Piston — TO Aching Mill — (BREAK) — UNCLAS (I SPELL) Alfa (FIGURES) Seven Two — Expected visit cancelled — (BREAK) — OVER'.

Aching Mill having missed all before the FROM address, transmits:

'(Piston) — (THIS IS) Mill — SAY AGAIN ALL BEFORE FROM — OVER'.

The NCS repeats the portion required:

'(Mill) — (THIS IS) Piston — I SAY AGAIN ALL BEFORE FROM — (Mill) — (THIS IS) Piston — PRIORITY — TIME One Eight One Six Two Five Zulu Mar 70 — FROM — OVER'.

Aching Mill, requiring no further corrections, answers:

'(Piston) — (THIS IS) Mill — (ROGER) — OUT'.

636. When it is necessary to ask for repetitions after a message has been receipted, such requests and replies thereto are to identify the message being queried by use of the transmission identification. If a transmission identification has not been transmitted, the originator's number and/or the date-time group are to be used to identify the message.

Example:

If the message in the previous example had been receipted before Aching Mill had decided that he required a repetition, he would have transmitted the following abbreviated service message:

'Piston — THIS IS Mill — (SERVICE) — Your (I SPELL) Alfa (FIGURES) Seven Two — SAY AGAIN ALL BEFORE FROM — OVER'.

After receipting the request, Hollow Piston would have obtained the information required and transmitted the following abbreviated service message:

'Mill — THIS IS Piston — (SERVICE) — Our (I SPELL) Alfa (FIGURES) Seven Two — I SAY AGAIN ALL BEFORE FROM — (Mill) — (THIS IS) Piston — PRIORITY — TIME One Eight One Six Two Five Zulu Mar 70 — FROM — OVER'.

Checking the Group Count

637. Group counts are to be checked as follows:

a. When the group count of a message does not correspond with the number of groups actually received, the receiving station requests a check by transmitting the phrase 'Interrogative GROUPS . . .', stating the number of groups actually received.

b. When queried, the transmitting station is to check and, if the number of groups received is correct, indicate this by use of the proword CORRECT. The receiving station then alters the group count accordingly.

c. If, after checking, the transmitting station finds that the number of groups received differs from the transmission copy (indicating that groups have not been transmitted or have not been received) the transmitting station is to repeat the group count followed by the initial letter of each group to pinpoint the missing group(s).

d. If there are more than 50 groups in the queried message, the transmitting station should transmit the initial letter of the first, eleventh, twenty-first, thirty-first, etc, group thereby revealing to the receiving operator the group of 10 in which the error occurred.

e. Operators should be trained to record five groups to a line, making it easier to count and check the number of groups in a message.

f. *Example 1.* Group count incorrect (see Figure 19). After receiving an answer from Brassy Oven and Silent Ghost to his offer of an immediate formal message, Bald Gates transmits the following codress message:(1)

'Oven — Ghost — THIS IS Gates — Oven transmit to BFGN — IMMEDIATE — TIME One Two One Zero Three Zero Zulu Feb 70 — GROUPS One Seven — BREAK — FIGURES — Zero Four Eight Six Four — Delta — Echo — Zulu — Bravo — Charlie — I SPELL(2) — Alfa Xray Juliett Uniform Xray — November Bravo India Quebec Oscar — November November Hotel Charlie Victor — Delta Sierra Sierra Sierra Delta — Foxtrot Alfa Golf Romeo Golf — Whisky Golf Bravo Whisky Echo — November Mike November Mike Romeo — Delta Bravo Charlie India Papa — Papa Xray Kilo Tango Uniform — FIGURES — Zero Four Eight Six Four — (BREAK) — OVER'.

Notes:

1. Under actual working conditions LONG MESSAGE procedure would be used in transmitting the above message. It has been deleted so that the reader may more easily follow the steps in procedure in relation to an incorrect group count.

2. The proword I SPELL is not normally used when transmitting encrypted groups by radiotelephone. In this example, however, the first groups of the cipher could lead to confusion in the group count if the proword I SPELL was not used, for example, the receive operator would write these groups as:

04864 DEZBC AXJUX

when it should read:

04864 Delta Echo Zulu Bravo Charlie AXJUX.

6 – 22

CODRESS MESSAGE — GROUP COUNT INCORRECT

MESSAGE FORM

CM 109
F Sigs 52–1
A 224
Revised Dec 70

Note: Shaded areas are for Commcen/Sigs use only.

LINE 1
LINE 2 *Oven - Ghost*
LINE 3 *THIS IS Gates*
LINE 4 *Oven T BEGN*
LINE 5

SECURITY CLASSIFICATION AND SPECIAL HANDLING INSTRUCTIONS

PRECEDENCE – ACTION	PRECEDENCE – INFO	DATE – TIME GROUP	MESSAGE INSTRUCTIONS
IMMEDIATE	ROUTINE	*121030Z May 70*	

ROUTING INDICATORS

FROM

TO

(WRITE ONLY ONE ADDRESSEE PER LINE)

CITE/DIG/ORIG NO

GR *17*

04864 DELTA ECHO ZULU BRAVO
CHARLIE AXJUX NBIQO NNHCV DSSSD
FAGRG WGBWE NMNMR DBCIP PXKTU
04864

REFERS TO MESSAGE	PAGE NO	DRAFTER'S NAME AND TITLE	PHONE NO	REF FILE NO	DATE
YES	*1*	*P R WHITE Adjt*	*4*	*34/2/5*	*12 May 70*

CLASSIFIED	NO OF PAGES	RELEASER'S NAME AND TITLE	SIGNATURE
YES ☐ NO ☐	*1*	*P R WHITE Adjt*	*P R White*

FOR OPR USE	R	DATE	TIME	SYSTEM	OPERATOR	D	DATE	TIME	SYSTEM	OPERATOR	SECURITY CLASSIFICATION
							12/5	*1035*	*Voice*	*LP*	

Figure 19

Brassy Oven noticing that the group count and the number of groups he has received are at variance, transmits:

'(Gates) — (THIS IS) Oven — Interrogative GROUPS One Six — OVER'.

Bald Gates replies:

'(Oven) — (THIS IS) Gates — WAIT — OUT'.

Bald Gates checks his group count against the transmission copy, discovers that there are only 16 groups and transmits:

'Oven — THIS IS Gates — CORRECT — OVER'.

Both the called stations then receipt the message:

'(Gates) — (THIS IS) Oven — (ROGER) — OUT'.

'(Gates) — (THIS IS) Ghost — (ROGER) — OUT'.

g. *Example 2.* Group count correct (see Figure 20). After receiving an answer from Milky Ashes to his offer of a formal message, Sabine Raider transmits the following message using operations code:

'(Ashes) — (THIS IS) Raider — ROUTINE — TIME One Two One Two Five Zero Zulu Feb 70 — (BREAK) (CRYPTO MESSAGE) — Mike Tango November — Sierra Uniform Bravo — Echo Lima Alfa — Golf Bravo Zulu — Foxtrot Oscar Uniform — Delta Oscar Papa — Oscar Bravo Juliett — Alfa Charlie Xray — Alfa Xray Juliett — November Bravo India — Quebec Oscar November — Papa Xray Kilo — Golf Hotel Charlie — (FIGURES) One Three Slant One Two — (BREAK) — OVER'.

Milky Ashes, having received 12 groups only, queries the group count:

'(Raider) — (THIS IS) (Ashes) — Interrogative GROUPS One Two — OVER'.

Sabine Raider replies:

'(Ashes) — (THIS IS) (Raider) — WAIT OUT'.

Sabine Raider checks the group count against his transmission copy and, finding there are 13 groups, transmits the first letter of each group:

'Ashes — THIS IS Raider — GROUPS One Three — Mike — Sierra — Echo — Golf — Foxtrot — Delta — Oscar — Alfa — Alfa — November — Quebec — Papa — Golf — OVER'.

Milky Ashes, having identified the missing group transmits:

'(Raider) — (THIS IS) Ashes — SAY AGAIN Five — OVER'.

Sabine Raider transmits:

'(Ashes) — (THIS IS) (Raider) — I SAY AGAIN Five — Foxtrot Oscar Uniform — OVER'.

Having io further queries, Milky Ashes receipts the message:

'(Raider) — (THIS IS) (Ashes) — (ROGER) — OUT'.

6 – 24

MESSAGE — GROUP COUNT CORRECT

MESSAGE FORM

CM 109
F Sigs 52–1
A 224
Revised Dec 70

Note: Shaded areas are for Commcen/Sigs use only.

LINE 1
LINE 2 *Ashes*
LINE 3 *THIS IS Raider*
LINE 4
LINE 5

SECURITY CLASSIFICATION AND SPECIAL HANDLING INSTRUCTIONS

PRECEDENCE – ACTION	PRECEDENCE – INFO	DATE – TIME GROUP	MESSAGE INSTRUCTIONS
ROUTINE	ROUTINE	*121250Z May 70*	

ROUTING INDICATORS
Raider
Ashes

FROM *12 TF Recce Flt*
TO *36 RAR*
(WRITE ONLY ONE ADDRESSEE PER LINE)

CITE/DIG/ORIG NO

GR

MTN SUB ELA GBZ FOU
DOP OBJ ACX AXJ NBI
QON PXK GHC
13/12

REFERS TO MESSAGE	PAGE NO	DRAFTER'S NAME AND TITLE	PHONE NO	REF FILE NO	DATE
No	*1*	*F BLACK OC*	*1*		*12 May 70*

CLASSIFIED	NO OF PAGES	RELEASER'S NAME AND TITLE	SIGNATURE
YES ☐ NO ☐	*1*	*F BLACK OC*	*F Black*

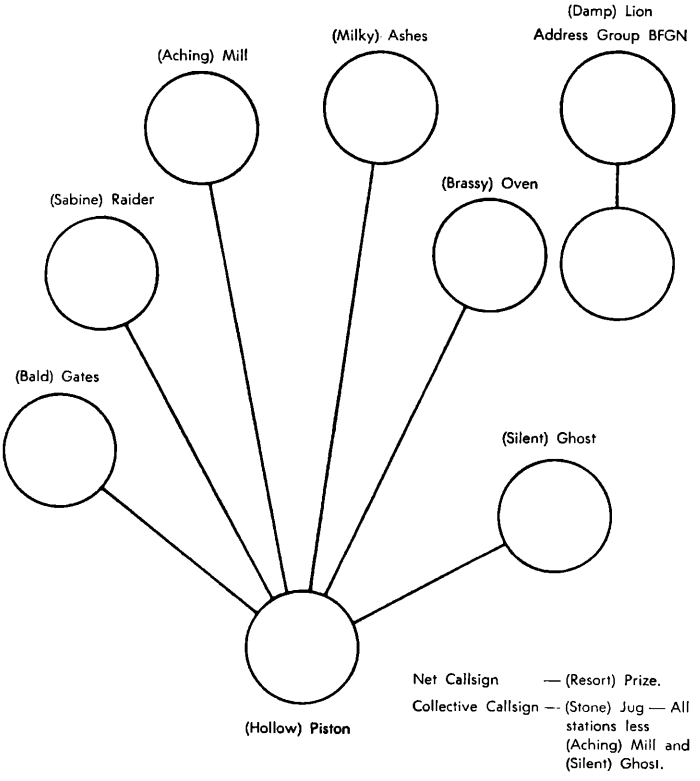
	R	DATE	TIME	SYSTEM	OPERATOR	D	DATE	TIME	SYSTEM	OPERATOR
RCR										
OPS	R					D	*12/5*	*1305*	*Voice*	*PD*
USR										

SECURITY CLASSIFICATION

Figure 20

ANNEX A TO CHAPTER 6

EXAMPLE NET — FORMAL MESSAGE PROCEDURE



CHAPTER 7

COMBINED WORKING PROCEDURES

GENERAL

701. Allied Communication Publication (ACP) 125 details the radiotelephone procedures agreed to by the ABCA Nations. Procedures from ACP 125 were, therefore, used as a guide in the preparation of this Pamphlet.

702. In the interests of the AMF, particularly the all arms users, certain modifications were necessary to the procedures set out in ACP 125. These modifications were made:

a. where the combined procedure itself was suspect (representations are to be made to the appropriate body to have these procedures amended);

b. where the combined procedure is impracticable, because of the present limitations of certain AMF communications equipment and security devices; and

c. where the combined procedure is practicable, but is also capable of being streamlined when working within a single Service.

703. In addition to detailing those combined procedures which have been modified for AMF use, this Chapter sets out other procedures which have not been included elsewhere in the Pamphlet, because they are not used internally within the AMF.

704. Certain other procedures set out in the Pamphlet are not included in ACP 125. For example, the procedure for closing down is not covered in the ACP. It is not considered that the use of this procedure when working in a Combined/Joint net would create problems, as it is simple and self-explanatory. However, if a nickname, which was unknown to the other services/nations sharing a net was used within the procedure, confusion could arise. Security devices such as codes, authentication tables, appointments titles, nicknames, code words, address groups and callsigns are not to be used when working in a Combined/ Joint net, unless their use has been agreed to by the other nations/ services concerned.

705. The Example Net shown in Annex A to this Chapter is used for all examples in this Chapter.

MISCELLANEOUS PROCEDURES

REBROADCAST YOUR NET
STOP REBROADCASTING
AUTHENTICATION IS
MORE TO FOLLOW

General

706. The purpose of this section is to describe differences between Combined and AMF procedures. Full examples are not given, but each combined interpretation is cross-referenced with the AMF procedure. When working on a Combined or Joint net, the AMF procedure, modified by the combined interpretation as given in this Section, is to be used.

Appointment Titles

707. Low grade security cover is gained by using appointment titles as follows:

a. In order to avoid disclosing the nature of headquarters by referring to specific appointments, such as GSO1, Adjt, etc, standard radio appointment titles are used, but are only authorized for use in the AMF or when working with Commonwealth Armies. These titles are not classified and only conceal the level of the headquarters. The titles used and their equivalent AMF appointments are listed in Table 9.

b. The titles are not to be qualified in any way except that:

(1) to indicate junior appointments, MINOR may be added;

(2) 'my', 'your', 'his', 'our', 'their', may be used before the title; and

(3) the address group or callsign may follow the title.

c. The following examples illustrate the use of appointment titles:

(1) *Example 1:*

SEAGULL MINOR — a member of the 'G' Staff and, in a Task Force HQ, the GSO3 (Ops); SEAGULL being the GSO2.

(2) *Example 2:*

SUNRAY MINOR CALLSIGN SABINE RAIDER ONE — the 2IC at that unit.

(3) *Example 3:*

SUNRAY ADDRESS GROUP Victor Golf Bravo Charlie — the commander whose headquarters has the address group VGBC.

TABLE 9 — AMF APPOINTMENTS

Serial	*AMF Appointment*	*Title*
(a)	(b)	(c)
1.	Commander	SUNRAY.
2.	Deputy Commander or 2IC	SUNRAY MINOR.
3.	Chief of Staff or Executive Officer	MOONBEAM.
4.	G (Operations) Staff	SEAGULL.
5.	G (NBC) Staff	BOXWOOD.
6.	G (Intelligence) Staff	ACORN.
7.	AQ (Combined) Staff	MOLAR.
8.	A Staff	MANHOLE.
9.	Q Staff	NUTSHELL.
10	Movements Staff	CONTRACTOR.
11.	Armour	IRONSIDE.
12.	Artillery	SHELDRAKE.
13.	Locating, including Artillery Intelligence Staff	CRACKER.
14.	Engineers	HOLDFAST.
15.	Signals	PRONTO.
16.	Infantry	FOXHOUND.
17.	Aviation	HAWKEYE.
18.	Ground Liaison Officer	GLOWORM.
19.	Supplies and Transport (RAASC)	PLAYTIME.
20.	Medical	STARLIGHT.
21.	Ordnance	RICKSHAW.
22.	Electrical and Mechanical Engineers	BLUEBELL.
23.	Provost	WATCHDOG.
24.	Offensive Support Operations Representative	OFFSET.
25.	Air Reconnaissance Representative	SPYGLASS.
26.	Transport Support Operations Representative	ATOLL.
27.	Navigation Representative	NOMAD.
28.	Air Traffic Controller	BASEBALL.
29.	Meteorological Forecaster	METEOR.
30.	Armament Officer	SHOTGUN.
31.	Army Air Supply Organization Representative	PELICAN.

Abbreviated Procedure (see Chapter 2)

708. In Combined/Joint working the use of the proword ROGER is not optional and it is to be used at all times, when included in a procedure.

Establishing a Net (see Chapter 3, Paragraph 302)

709. Abbreviated callsigns are not to be used in establishing communications on a Combined/Joint net.

Tuning (see Chapter 3, Paragraph 314)

710. The press-to-talk switch is to be depressed for only 10 seconds when transmitting a tuning call on a Combined/Joint net.

Long Message Procedure (see Chapter 3, Paragraphs 335 and 336)

711. Long Message procedure is not used in Combined/Joint working (see Paragraphs 716 to 723).

Retransmission (see Chapter 4)

712. The term 'retransmission' is known as 'rebroadcast' in certain allied countries. The procedure for 'retransmission (rebroadcast)' is not described in ACP 125, Radiotelephone Procedure.

Rebroadcast

713. 'Rebroadcast' procedure is similar to 'Retransmission' procedure with the exception that the prowords REBROADCAST YOUR NET and STOP REBROADCASTING are used to commence and terminate the procedure respectively.

Authentication (see Chapter 5)

714. Authentication tables currently in use within the AMF prohibit the use of self-authentication and, therefore, the procedure for using it is not prescribed in Chapter 5. Where an authentication table does not prohibit the use of self-authentication, the procedure is to be as follows:

Hollow Piston transmits a message to Sabine Raider:

'Raider — THIS IS Piston — Move now — AUTHENTICATION IS Bravo Lima Xray — OVER'.

Sabine Raider after establishing the authenticity of the message replies:

'(Piston) — (THIS IS) Raider — ROGER — OUT'.[1]

More to Follow (see Chapter 3, Paragraphs 335 and 336)

715. The proword MORE TO FOLLOW in Combined/Joint working is used by the transmitting station in the final instructions of a message to indicate to the called station that he has further traffic for him. It replaces the phrase 'I have a further (precedence) message for you' used internally within the AMF.

BREAK-IN PROCEDURE

General

716. 'Long Message' procedure is not approved for Combined/Joint use. When working in a Combined/Joint net it is replaced by 'Break-in' procedure.

Releasing Press-to-talk Switch

717. When transmitting a message, the press-to-talk switch is to be released at the end of each natural phrase to allow other stations to break in if necessary.

Circumstances Causing 'Break-in'

718. A station having a message of higher precedence than the transmission in progress may break in and thus suspend that transmission. Circumstances where 'Break-in' procedure[2] is necessary are as follows:

a. *Flash Messages.* Break in at once and transmit the message.

b. *Immediate.* May break in at once and pass the message using a preliminary call where required. On a directed net, NCS approval to transmit the message must be obtained first.

c. *Priority.* As for Immediate except that only long routine messages should be interrupted.

719. Unregistered messages which warrant the use of 'Break-in' procedure are to be assigned a precedence by the originator.

Notes:

1. If there is any doubt as to the authenticity of the message which was self-authenticated (even though the authentication is correct), it is to be challenged.

2. 'Break-in' procedure is not normally employed during the transmission of tactical messages except to report enemy contacts.

720. The precedence spoken three times means 'cease transmission immediately'. Silence is to be maintained until the station breaking-in has passed his message.

Flash Messages

721. 'Break-in' procedure for messages of FLASH precedence on either a free or a directed net is illustrated in the following example:

Sabine Raider is transmitting an IMMEDIATE message to Aching Mill when Bald Gates is handed a FLASH message for transmission to Aching Mill. When Sabine Raider pauses, Bald Gates transmits:

'FLASH FLASH FLASH — Mill — THIS IS Gates — FLASH — etc . . . OVER'.

Aching Mill receipts the message:

'(Gates) — (THIS IS) Mill — ROGER — OUT'.

Sabine Raider then continues with his transmission:

'Mill — THIS IS Raider — ALL AFTER — etc . . .'.

Immediate or Priority Messages

722. **Directed Nets.** 'Break-in' procedure for messages of IMMEDIATE or PRIORITY precedence, when the net is directed, is illustrated in the following example:

Aching Mill is transmitting a PRIORITY message to Bald Gates when Sabine Raider is handed an IMMEDIATE message for Milky Ashes. When Aching Mill pauses, Sabine Raider transmits:

'IMMEDIATE IMMEDIATE IMMEDIATE — Piston — THIS IS Raider — IMMEDIATE for Ashes — OVER'.

Aching Mill, hearing Sabine Raider break-in, ceases his transmission. Hollow Piston transmits:

'(Raider) — (THIS IS) Piston — SEND YOUR MESSAGE — OUT'.

On hearing this authorization, Milky Ashes transmits:

'(Raider) — (THIS IS) Ashes — (SEND YOUR MESSAGE) — OVER'.

Sabine Raider transmits:

'(Ashes) — (THIS IS) Raider — IMMEDIATE — etc . . . OVER'.

Milky Ashes receipts the message:

'(Raider) — (THIS IS) Ashes — ROGER — OUT'.

Aching Mill continues with his priority message to Bald Gates:

'Gates — THIS IS Mill — ALL AFTER, etc . . .'.

Free Nets

723. 'Break-in' procedure for messages of IMMEDIATE or PRIORITY precedence, when the net is free, is illustrated in the following example:

Sabine Raider is transmitting a long ROUTINE message to Milky Ashes when Aching Mill is handed a PRIORITY message for Milky Ashes. When Sabine Raider pauses, Aching Mill transmits:

'PRIORITY PRIORITY PRIORITY'.

Sabine Raider, hearing the precedence spoken three times, does not continue with his message. Aching Mill continues:

'Ashes — THIS IS Mill — PRIORITY etc . . . OVER'.

Milky Ashes receipts the message:

'(Mill) — (THIS IS) Ashes — ROGER — OUT'.

Sabine Raider then continues his transmission:

'Ashes — THIS IS Raider — ALL AFTER etc . . .'.

EXECUTIVE METHOD

EXECUTE TO FOLLOW EXECUTE IMMEDIATE EXECUTE NEGAT

General

724. The 'Executive' method is used when it is desired to execute a message at a given instant, for example, to ensure that two or more units take action at the same moment.

725. Basic operating rules apply equally to the 'Executive' method. The basic procedures are amplified in this section.

726. When communications are good, it is not necessary to have all stations acknowledge receipt of tactical messages. In these circumstances, only the station(s) whose callsign(s) precede(s) the proword OVER receipt the message.

Executive Methods

727. These are the 'Delayed Executive' method and the 'Immediate Executive' method.

Delayed Executive Method

728. A tactical message sent by the 'Delayed Executive' method is to carry the warning proword EXECUTE TO FOLLOW in the message instructions, immediately preceding the text. The executive order is to be sent later in the form of 'Standby' — EXECUTE, the proword EXECUTE being the instant of execution.

729. The following example illustrates the use of this method:

Sabine Raider transmits:

'Prize — THIS IS Raider — EXECUTE TO FOLLOW — Platypus — OVER'.

All stations respond in alphabetical sequence of full callsigns:

'(Raider) — (THIS IS) Mill — ROGER — OUT'.

'(Raider) — (THIS IS) Gates — ROGER — OUT',

'(Raider) — (THIS IS) Piston — ROGER — OUT'.

'(Raider) — (THIS IS) Ashes — ROGER — OUT'.

When ready to execute, Sabine Raider transmits:

'Prize — THIS IS Raider — Standby — EXECUTE — Gates — OVER'.

Bald Gates, being the station nominated to receipt the message, transmits:

'(Raider) — (THIS IS) Gates — ROGER — OUT'.

730. The text of a message being executed is to be repeated prior to transmission of the proword EXECUTE when:

a. it is a portion of, or one of several outstanding EXECUTE TO FOLLOW messages; or

b. a considerable time has elapsed between the transmission of an EXECUTE TO FOLLOW message and the transmission of the executive order.

731. The following example illustrates the execution of portions of a 'Delayed Executive' method message:

Sabine Raider transmits:

'Prize — THIS IS Raider — EXECUTE TO FOLLOW — Kangaroo stages (FIGURES) One and (FIGURES) Two — Ashes — OVER'.

Milky Ashes receipts the message:

'(Raider) — (THIS IS) Ashes — ROGER — OUT'.

When ready to execute the first stage of plan Kangaroo Raider transmits:

'Prize — THIS IS Raider — Kangaroo stage (FIGURES) One — 'Standby' — EXECUTE — Ashes — OVER'.

Milky Ashes receipts the message:

'(Raider) — (THIS IS) Ashes — ROGER — OUT'.

When ready to execute the second stage of the plan, Sabine Raider transmits:

'Prize — THIS IS Raider — Kangaroo Stage (FIGURES) Two — 'Standby' — EXECUTE — Ashes — OVER'.

Milky Ashes receipts the message:

'(Raider) — (THIS IS) Ashes — ROGER — OUT'.

Immediate Executive Method

732. In cases of urgency the executive order may be transmitted in the final instructions of the message. This is termed the 'Immediate Executive' method. It should be noted that:

a. the use of the 'Immediate Executive' method does not allow stations to obtain verifications, repetitions, acknowledgements or cancellations before the message is executed;

b. messages sent by the 'Immediate Executive' method should be in plain language;

c. when using the 'Immediate Executive' method the warning proword IMMEDIATE EXECUTE is used in the message instructions instead of the proword EXECUTE TO FOLLOW; and

d. the text of the message is transmitted twice, separated by the proword I SAY AGAIN. The executive order is transmitted in the final instructions.

733. The following example illustrates the 'Immediate Executive' method:

Hollow Piston transmits a net call to all stations:

'Prize — THIS IS Piston — IMMEDIATE EXECUTE — Commence attack — I SAY AGAIN — Commence attack — Standby — EXECUTE — Raider — OVER'.

Sabine Raider receipts the message:

'(Piston) — (THIS IS) Raider — ROGER — OUT'.

Acknowledgement of Messages

734. Messages, the content of which is difficult to action, quite often require acknowledgement of an understanding of both the message and the capabilities of the addressee to perform the action. In such cases the originator adds the word ACKNOWLEDGE (ACK) as the last word of the text. When the responsible officer or his authorized representative is in close proximity to the radio set, and no delay in answering will result, the proword WILCO is used in receipting, in lieu of the proword ROGER. However, in other cases, the operator is to receipt in the usual manner and acknowledge later when ordered.

735. The following example illustrates the use of ACKNOWLEDGE (ACK) in a message and the subsequent answers to it:

Sabine Raider transmits a message for which the originator requires an acknowledgement that each addressee is able to carry out the action required:

'Mill — Ashes — THIS IS Raider — EXECUTE TO FOLLOW — Institute plan (I SPELL) Alfa — ACK — OVER'.

The OC of Aching Mill is not in close proximity (or desires to consider the message before acknowledging). Aching Mill therefore transmits:

'(Raider) — (THIS IS) Mill — ROGER — OUT'.

The OC of Milky Ashes is in close proximity and directs the operator to answer:

'(Raider) — (THIS IS) Ashes — WILCO — OUT'.

When ready to acknowledge, Aching Mill transmits:

'Raider — THIS IS Mill — WILCO your last transmission — OUT'.

or

'Raider — THIS IS Mill — WILCO — Institute plan (I SPELL) Alfa — OUT'.

When ready to execute, Sabine Raider transmits:

'Mill — Ashes — THIS IS Raider — Standby — EXECUTE — Mill — OVER'.

Aching Mill receipts for both stations:

'(Raider) — (THIS IS) Mill — ROGER — OUT'.

Verifications and Repetitions

736. Verifications and Repitions of all, or portions of, 'Delayed Executive' method messages are to be in accordance with the procedures set down in Chapter 3.

Execution of Non-Executive Method Messages

737. Tactical messages which do not employ 'Delayed Executive' or 'Immediate Executive' methods should have a time-group included in the message ending. The use of a time-group on a tactical message ordering action indicates that action is to be taken on receipt, unless otherwise indicated in the text of the message.

738. The following examples illustrate this procedure:

a. Action to be taken on receipt:

Sabine Raider transmits to Milky Ashes:

'Ashes — THIS IS Raider — Implement Attack — BREAK — TIME One Seven One Four Zulu — OVER'.

Milky Ashes answers:

'(Raider) — (THIS IS) Ashes — ROGER — OUT'.

b. Action to be taken on receipt:

Sabine Raider transmits:

'Ashes — THIS IS Raider — Implement Attack — Tango One Eight[1] — OVER'.

Milky Ashes answers:

'(Raider) — (THIS IS) Ashes — ROGER — OUT'.

Cancelling Messages

739. Messages not sent by the executive method are to be cancelled in accordance with Chapter 3, Paragraphs 354 to 356.

740. Messages sent by the 'Delayed Executive' method and not yet executed are to be cancelled by use of the proword NEGATIVE (NEGAT). Such messages can be cancelled individually or as a group, in accordance with the following examples:

a. To cancel all messages transmitted to the same call and awaiting execution:

'Prize — THIS IS Piston — NEGAT — OVER'.

b. To cancel one of several messages awaiting execution:

'Ashes — THIS IS Raider — NEGAT — Implement attack Tango One Eight — OVER'.

Note:

1. Tango One Eight is a code group meaning, 'Action is to commence at 1830 hrs'.

741. When a message is awaiting execution and a portion of it has been cancelled, or executed, only the remainder of the message is considered to be outstanding.

742. Messages sent by the executive method cannot be cancelled once the executive signal EXECUTE has been transmitted.

Time Check Using Executive Method

743. A time check may be sent by using the 'Delayed Executive' method as in the following example:

Hollow Piston transmits a time check to all stations on the net:

'Prize — THIS IS Piston — EXECUTE TO FOLLOW — TIME One Four One Five — Mill — OVER'.

Aching Mill receipts the message for the net:

'(Piston) — (THIS IS) Mill — ROGER — OUT'.

Hollow Piston then transmits the executive signal to coincide with the time 1415 hours:

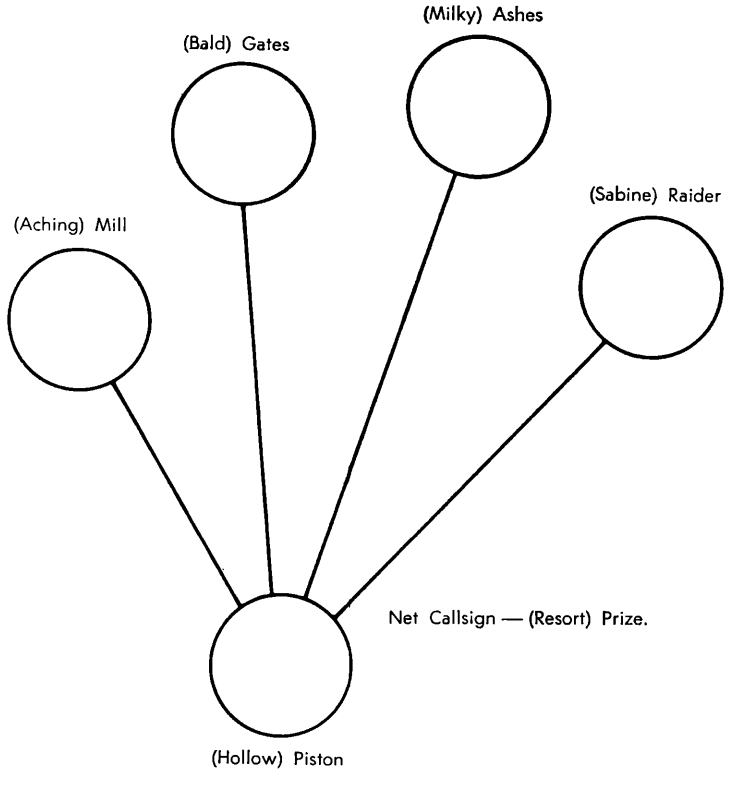
'Prize — THIS IS Piston — Standby — EXECUTE — Mill — OVER'.

Mill transmits:

'(Piston) — (THIS IS) Mill — ROGER — OUT'.

ANNEX A TO CHAPTER 7

EXAMPLE NET — COMBINED WORKING PROCEDURES



CHAPTER 8

TARGET INDICATION, OTHER ARMS

INFANTRY/TANK TARGET INDICATION

Introduction

801. There will be many occasions where armour is co-operating with infantry. Crew commanders of all armoured fighting vehicles (AFVs) must know the methods that can be used by the infantryman when he calls for neutralizing or destructive fire onto an enemy position.

802. The drills for target indication can be applied to all AFVs, whether tank (MBT), fire support vehicle (FSV), light reconnaissance vehicle (LRV) or armoured personnel carrier (APC).

Sequence of Target Indication

803. The infantryman must:

a. *attract* the crew commander's attention,

b. get the crew commander to look in the *right direction,*

c. give the *range,*

d. *describe* the details of the target, and

e. give the crew commander an *executive order.*

Attracting Attention

804. The infantryman can use the following methods to attract the crew commanders attention:

a. *Radio.* Radio is the normal means, and sets must be capable of communicating with one another. If tanks are using B47 set to infantry AN/PRC 25 set, ensure that the different frequency ranges for the sets match the allotted frequency, and that the frequency is not less than a 100 kilocycle channel, for example, 41.70 or 41.80 but NOT 41.75. Ensure that the AN/PRC 25 system switch is in the 'ON' position — not 'SQUELCH' position. The tank's callsign is marked on the rear of the turret and (when side plates are fitted) on both sides of the hull. With a well trained infantry/tank team, radiotelephone procedure and callsigns are abbreviated.

b. *Personal Contact.*

c. *Tank Telephone.* The tank telephone is located at the left rear of the tank in an armoured box with a flap for access to the handpiece. The handpiece is connected to a roller drum by eight feet of cable, enabling the user to look around the LEFT side of the tank but not the RIGHT side. The infantryman should press the buzzer button inside the box — TWICE — pull out about six to eight feet of cable and step back. It is preferable to step to the LEFT side of the tank, but if under direct fire some safety can be gained by sheltering behind the tank. The crew commander on hearing the buzzer will switch his radio harness to IC (intercom) and say 'Commander'. The infantryman replies 'Telephone — THIS IS Sabine Raider 5 — Target'. The whole crew are able to hear the conversation and the driver will not move the tank suddenly.

d. *Remote Cable Handset.* This system of communication is mainly used in a defensive or semi-static position. A handset with buzzer is connected to a cable drum on the back of the turret (approximately 200 metres of cable). The remote handset also allows use of the selected radio facility in the tank.

Indicating Direction

805. The methods of indicating the right direction to the crew commander are as follows:

a. *Reference Points.* Either pre-arranged or hasty. The reference point method is used in open country and, when time allows, pre-arranged reference points are agreed, for example, before a deliberate attack. Hasty reference points can be conspicuous natural or artificial features.

b. *Gun Barrel of the Tank* (see Figure 21). The gun barrel method is mainly used in close country, and whichever direction the barrel is pointing is taken as 12 o'clock on the horizontal clock.

TARGET INDICATION — AXIS GUN BARREL

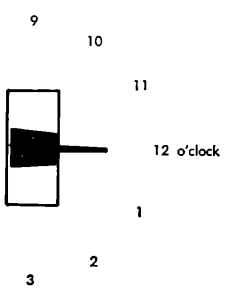


Figure 21

c. *Axis Hull or Axis of Advance or Axis Road/Track* (see Figure 22). The axis system is similar to gun barrel system except in this case the hull or the axis of advance, whether moving cross country or along a road/track, is taken as 12 o'clock on the horizontal clock. If the infantryman is using the tank telephone, the axis of the hull method will be simplest.

TARGET INDICATION — AXIS HULL OR AXIS OF ADVANCE

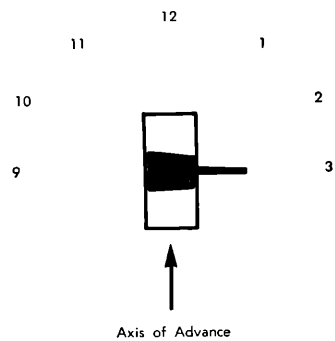


Figure 22

d. *Fire Shot for Reference.* The shot for reference method has many variations. It is usually used with Sub-paragraphs 805. a., b., or c. The infantry commander may request the tank 'fire shot (20 pr) or burst (MG) for reference' or he may indicate the target himself by firing a shot (7.62 tracer, a burst from the GPMG or a M79 HE grenade) and instructing the tank, 'firing shot/burst/grenade for reference'. Once the fall of shot is identified, corrections are made onto the target.

Range

806. Either the range from the infantryman to the target or the grid reference of the target must be given. The former is preferable for close country and the latter in open country at longer ranges.

Description of Target

807. The tank crew commander must be told what the target is so that he can, if necessary, select the most appropriate ammunition with which to engage it.

Executive Order

808. The infantryman tells the tank what he wants done to the target. Normally this will be:

a. destroy; or

b. neutralize. In this case the infantryman should indicate the time for which the target is to be neutralized and what he intends doing next, for example, 'neutralize for 10 minutes at my command — I am moving around the right flank — cease fire at my command'.

Correction of AFV Fire

809. The crew commander may fail to identify the target or may engage the wrong target. If this occurs the infantryman will use the previous fall of shot to correct, or give another description of the target.

810. Corrections must always be made from the infantry point of view. In open country when correcting fire onto targets at longer ranges, the infantryman should use the normal artillery system of line corrections; for example, 'go LEFT . . . metres' followed by corrections ADD or DROP. To assist the crew commander the infantryman must report his position to the tank; for example, 'I am positioned about 300 metres to your LEFT in the tree line'.

811. Correction of fire in close country may be conducted by simple commands such as, 'LEFT/RIGHT/ADD/DROP . . . Feet/metres.'

Examples

812. The examples given in the following paragraphs illustrate the uses of the methods described in Paragraphs 804 to 811.

813. **Example 1.** This Example illustrates the use of the 'Hasty Reference Point' method to indicate a sniper:

Serial	*Infantry Observer Callsign Sabine Raider 5*	*Crew Commander Callsign Aching Mill 36*	*Remarks*
(a)	(b)	(c)	(d)
1.	Three Six — THIS IS Five — Target — OVER.		
2.		Three Six — OVER.	
3.	Can you identify rocky outcrop six hundred (metres) to my front — OVER.		

(a)	(b)	(c)	(d)
6.	Five — Move forward about three zero (metres) but look out for my forward section — the enemy MG is still firing — OVER.		
7.		(ROGER) — OVER.	The tank moves forward carefully, between the trees if possible. Infantry observer moves behind the tank to use the tank telephone.
8.		Commander.	Infantry observer buzzes crew commander.
9.	Telephone – Target.		
10.		ROGER — MG in spider hole — where is it?	
11.	WAIT . . . Target reference hull — two o'clock — five zero (metres).		Infantry observer moves quickly to side of tank to check.
12.		Not observed — can I fire canister?	
13.	Yes — all clear.		Tank fires some canister rounds to clear the vegetation.
14.	Can you see the target?		
15.		No — fire shot for reference.	
16.	ROGER — WAIT.		Infantry observer moves to side of tank and fires single tracer rounds until tank fires armament. Infantry observer checks accuracy, moves back to the tank telephone and buzzes crew commander.
17.		Commander.	
18.	Target destroyed.		

Continuous Calling Method — Poor Visibility

817. The continuous calling method is used when the tank cannot see a pinpoint target due to thick vegetation.

818. The coaxial MG is used to range onto the target and then the tank engages with 20 pr main armament. The infantry commander may not actually be able to see the tank, but he must have an accurate idea of its position, either from the noise of its engine and armament, or from directions given by other infantrymen in the platoon.

819. The following order is given to the tank crew commander. 'Axis of Advance — 10 o'clock — 50 — fire burst for reference and I'll start calling', or the tank crew commander may request the infantryman to 'start calling'.

820. As soon as the infantryman identifies the burst on the ground, he commences calling corrections as follows: If the fall of shot is LEFT he calls 'RIGHT' and continues to do so until a burst falls to the RIGHT of the target and then he calls 'LEFT', until he brackets; similarly he calls 'ADD' or 'DROP' until he achieves a hit on the target.

821. **Example 5.** This Example illustrates the 'Continuous Calling' Method:

Serial	*Infantry Observer Callsign Sabine Raider 5*	*Crew Commander Callsign Aching Mill 36*	*Remarks*
(a)	(b)	(c)	(d)
1.	Three Six — **THIS IS** Five — **Target** — **OVER.**		
2.		Three Six — OVER.	
3.	Reference axis of advance — two o'clock — six zero (metres) — MG in bunker — OVER		
4.		Not identified — OVER.	
5.	(ROGER) — Fire burst for reference — and I'll start calling — **OVER.**		Alternatively in Serial 4 the crew commander may have requested 'start calling'.
6.		(ROGER) WAIT — Firing now — OVER.	Tank fires a long burst of 20 to 30 rounds.
7.	Right — (burst) — Right — (burst) — Right — (burst) — Left — (burst) — Drop — (burst) — Drop — (burst) — Add — (burst) — Target — fire shell — OVER.		

(a)	(b)	(c)	(d)
8.		(ROGER) — Firing now — OUT.	The infantry observer would observe the fall of shot and if necessary, ask for a repeat or make any further corrections.

Tank Forward Observer

822. Within the tank squadron there is provision for a tank forward observer who is usually an officer. When required, the tank forward observer moves dismounted with the infantry commander with a man pack radio tuned to the squadron/troop frequency. He acts in much the same capacity for the tanks as the artillery forward observer does for the guns.

ARTILLERY FIRE DIRECTION

Introduction

823. This procedure is agreed American, British, Canadian and Australian (ABCA) Observers Fire Mission Format. It is used between other arms and artillery for the indication and, if necessary, the engagement of targets by artillery. It is also used for the indication and engagement of targets by mortars.

824. In this procedure the artillery observer is referred to as the forward observer (FO). The officer of the supported arm who calls for fire is referred to as The Observer.

Basic Principles

825. Artillery fire is highly lethal and, if not handled carefully, can be very dangerous to our own troops; therefore, whilst other arms observers, including air observers, should be able to control artillery fire, they should only do so when it is impossible to obtain timely advice and assistance from an artillery observer.

826. Requests for artillery fire by other arms observers are always directed to a forward observer or battery commander who is normally on the regimental or squadron net when supporting armour, and on the battalion or company net when supporting infantry.

827. The observer gives the forward observer or battery commander all the necessary information to enable him to identify the target and judge what firepower to use.

828. If the forward observer cannot identify the target, the observer adjusts the fire until he hits the target, when he hands over the fire for effect to the forward observer. If, at any time during the process, the forward observer identifies the target, he immediately takes over the mission.

Danger Close Missions

829. When the target to be engaged is 600 metres, or less, from our own troops the 'Danger Close Mission' procedure must be adopted. If the observer is unsure of his own, or the target's, location the distance must be extended beyond 600 metres to ensure the safety of our own troops. Artillery advice should be sought in deciding this distance.

830. The 'Danger Close Mission' procedure involves calculations being made by the observer based on:

a. the distance from our own troops to the target;

b. the safe distance for the particular weapon, and ammunition being used;

c. the line of fire of the gun(s); and

d. the zone of the gun(s).

831. In view of the above requirements, except in cases of operational emergency when our own troops are actually being assaulted, 'Danger Close Missions' should not be conducted by other arms observers.

Crest Clearance

832. The possibility of rounds bursting on intervening crests which are occupied by own troops should not be overlooked by the forward observer. If this possibility is judged to exist, the forward observer should request the following information from the observer:[1]

a. The location of the observer and own troops in the vicinity, together with details of the protection available.

b. The location and altitude of all crests occupied by own troops, in the vicinity, together with the height of any trees, buildings, etc, on these crests.

Note:

1. This information should be passed as an 'officer-to-officer' conversion.

833. Once he has assessed this information, if the forward observer thinks that there is a possibility of rounds bursting on intervening crests, then he will suggest to the observer the most suitable method of engaging the target and advise on the risks involved. The observer must be prepared to accept the risks before engaging the target.

Radiotelephone Procedure

834. When operating on radio nets of other arms, artillery officers will normally use their own callsigns but may be allotted a callsign by the supported arm.

835. Normal radiotelephone procedure is used with the following exceptions:

a. Artillery fire orders are repeated back in full. Repeating back is normally terminated by the proword OUT. When the recipient knows the orders are incomplete (for example, at the end of the warning order) he should, after repeating back, say OVER to maintain the link.

b. If a mistake in an order is detected during its transmission the sender corrects himself by saying CORRECTION followed by the whole order again.

c. If an order is repeated back incorrectly, or a mistake in the original order is discovered by the sender whilst the receiver is acknowledging, the proword WRONG is used, followed by the whole order again. An exception to this rule is in the initial call for fire, when only the incorrect part need be repeated.

d. Requests for repetitions may be either:
   (1) SAY AGAIN, meaning a complete repetition, or
   (2) SAY AGAIN . . ., qualified by a suitable word or phrase when only part of the transmission has been missed, for example, SAY AGAIN Direction.

Elements of a Fire Mission

836. The elements of a fire mission are:

a. observer's identification,
b. warning order,
c. location of target,
d. description of target,
e. method of engagement, and
f. method of fire and control.

837. **Observer's Identification.** This is the establishment of communication between the observer and the forward observer. Normal radiotelephone prcedure is used.

838. **Warning Order.** The order 'Fire Mission' is the warning order. The selection of the number of guns to engage the target should normally be left to the forward observer.

839. **Location of Target.** To enable the correct calculations to be made at the guns, the 'direction' (grid bearing from the observer to the target) should always be included when giving the location of a target. The location of a target may be indicated in one of the following ways:

a. *By a Grid Reference.* The observer gives the grid reference and direction of the target.

Example:

'Grid 123456 Direction 1240'.

b. *By a Target Number or Reference Object.* The target number is that of a previously recorded target. The reference object is one which is known to both the observer and the forward observer.

Examples:

(1) 'Target ZT 1242, Direction 1240'.
(2) 'Concrete Bridge, Direction 1240'.

c. *By a Target Grid Correction from a Recorded Target or from a Reference Object.* When a target is located near a previously recorded target or a reference object, the information given in Sub-paragraph b. is given, together with the required target grid correction from the recorded target or reference object, (the direction is to the new target). This method should only be used when the new target is within 500 metres of the recorded target or reference object.

Examples:

(1) 'Target ZT 1242, Direction 1300, Right 400, Drop 200'.
(2) 'Concrete Bridge, Direction 1180, Left 200, Add 400'.

d. *By Polar Co-ordinates.* Polar co-ordinates consist of the direction, distance and vertical correction from the observer's position to the target. The observer's position must first be stated if not already known to the forward observer. If the vertical correction is in metres, the word 'metres' may be omitted.

Examples:

(1) 'Grid 106439, Direction 1240, Distance 2000, Up 50 feet'.
(2) 'Grid 248726, Direction 2860, Distance 1500, Down 15'.

840. **Description of Target.** The description of the target should be brief but sufficiently informative to enable the forward observer to determine the relative importance of the target and the best method of attack. The observer should state the approximate number of personnel, weapons, vehicles, etc, the size of the area covered by the target and degree of protection. Examples are as follows:

a. '50 infantry and 3 tanks in open, 200 by 200'.

b. '60 infantry digging in along ridge line'.

c. '20 vehicles in wood, 300 by 300'.

841. **Method of Engagement.** The method of engagement of the target includes the following:

a. *Type of Engagement.* This indicates to the forward observer any special procedures. If the type of engagement is not given, the convention is that an area neutralization mission is required. Types of engagements which may be given are:

(1) 'destruction' — a single gun target, and

(2) 'danger close' — when the target is close to our own troops (within 600 metres).

b. *Ammunition.* This element gives the type required. If ammunition other than HE (high explosive) Fuze Quick is required, either during adjustment and/or fire for effect, it must be specified separately. Orders for shell are given as 'HE', 'Illuminating', 'WP', or 'Smoke' (including colour, if other than white). The orders for fuze are given as 'Quick', 'VT', 'Time', 'Delay' or 'Concrete piercing'.

842. **Method of Fire and Control.** The method of fire and control includes the following:

a. Elements which indicate the control to be exercised by the forward observer or the observer over:

(1) whether adjustment is to be carried out or fire delivered without adjustment,

(2) the method of fire, and

(3) the time of delivery of fire.

b. The orders to be used are as follows:

(1) *'Adjust fire'.* Fire is to be adjusted by the observer. If more than one gun is required, the order ' . . . (Number of guns), Adjust fire' must be given. This order may be prefixed by 'At my command' [see Paragraph 842.b. (3)].

(2) *'Fire for effect'*. Used by the observer when he wishes the target to be engaged without adjustment or when he is satisfied that the adjustment process has been satisfactorily completed; for example, after his report of 'Target'. This order may be prefixed by 'At my command' [see Paragraph 842.b. (3)].

(3) *'At my command . . . Fire'*. Used when the observer wishes to control the moment of firing for any reason. The order 'Fire' is given when the fire unit has reported 'Ready' and the observer wishes it to fire. 'At my command' is cancelled by 'Cancel at my command'.

(4) *'TOT'*. The time at which the round(s) are to arrive on the target.

(5) *'Cannot observe'*. Used by the forward observer when the target is not identified.

(6) *'Target identified'*. Used by the forward observer when he has identified the target and will take over any further adjustment necessary.

(7) *'Check firing'*. This means stop firing and only applies to the firing of the guns or a particular gun if a gun is named; any other actions are continued in accordance with orders received. 'Check firing' is cancelled by 'Cancel check firing'.

Target Grid Corrections

843. Target grid corrections are to be given as follows:

a. The observer adjusts fire onto the target with reference to the line observer target (line OT).

b. Corrections are given as in Table 10.

TABLE 10 — TARGET GRID CORRECTIONS

Serial	*Position of burst in relation to the line OT or target*	*Correction*
(a)	(b)	(c)
1.	Right of line OT.	'Left . . .'.
2.	Left of line OT.	'Right . . .'.
3.	Beyond the target.	'Drop . . .'.
4.	Short of the target.	'Add . . .'.
5.	On the target.	'Target . . .'.

c. *Adjustment.* Fire is adjusted onto the target by applying target grid corrections to:

(1) correct fire onto the line OT with direct correction, that is, no bracketing, and

(2) bracket along the line OT until a 'short bracket' of 100 metres is obtained.

d. *Line Corrections.* Fire must always be corrected on to the line OT. This will give a definite indication whether the round is 'Over' (beyond the target) or 'Short' (the observer's side of the target) as seen by the observer looking along the line OT. Unless the guns are firing over the head of the observer it will usually be preferable to visualize the line OT as a lane having some width. This is because of the relatively large length zone of the gun, compared to its breadth zone. Under these circumstances the observer should not give a line correction, after the initial line correction, except on the evidence of two or more rounds. To assist in obtaining an accurate correction to bring the next round onto the line OT, the angle between the first round and the line OT should be measured with the graticules of the binoculars or with the hand. Having measured this angle and knowing the approximate distance observer to target, the correction necessary to bring the round onto the line OT can be found by using the subtension rule 'one mil at 1000 units subtends one unit'. An example is as follows:

> The observer is 2000 metres from the target and he observes a round as falling 100 mils to the right of the line OT. His correction will be 'Left 200' ($100 \times 2 = 200$). Line corrections may be ordered to the nearest 10 metres.

e. *Bracketing.* As soon as a round is obtained on the line OT or near enough to it to give a positive indication as to range, the observer should correct along this line. Because it is not possible to measure accurately how far 'over' or 'short' of the target a round may be, a process of bracketing is used. Basically this consists of getting an opening 'long bracket' of 400 or 800 metres (two rounds separated by this amount falling 'over' and 'short' of the target) and subsequently splitting this bracket progressively until a 'short bracket' of 100 metres is obtained. A correction of 'Add 800', if it produces a bracket, should be followed by 'Drop 400'. If this round falls 'short' the next correction should be 'Add 200' and so on. As soon as a 100 metre bracket is obtained the observer orders 'Add (or Drop) 50. Target'.

Should the target be hit before adjustment is completed the observer will immediately report 'Target' and no further correction will be necessary.

f. *An Example of the Process of Adjustment* is given in Figure 23, and Table 11.

ADJUSTMENT OF FIRE

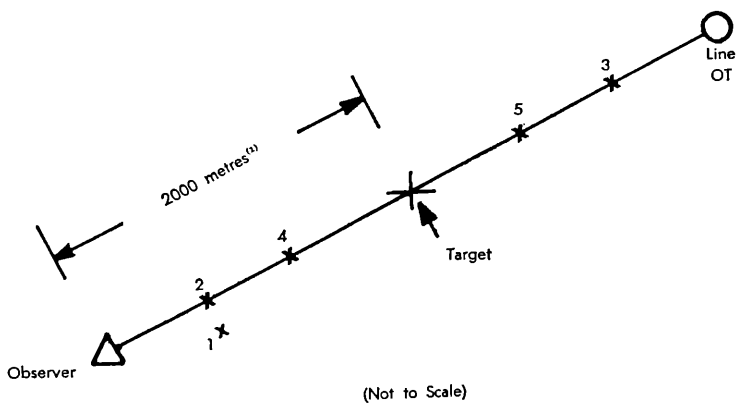


Figure 23

Note:

1. The distance observer-target is about 2000 metres. The observer calculates that one mil measured by his binocular graticules will equal two metres.

TABLE 11 — EXAMPLE OF THE PROCESS OF ADJUSTMENT

Round	*Observation*	*Correction*
(a)	(b)	(c)
1.	Right 100 mils.	'Left 200'.
2.	Short.	'Add 400'.
3.	Over.	'Drop 200'.
4.	Short.	'Add 100'.
5.	Over.	'Drop 50. Target'.

Procedure When the Target is Identified

844. The forward observer will check back the observers call for fire and terminate his transmission with OUT. He then attempts to identify the target. If identified he reports 'Target identified' and proceeds with adjustment. The forward observer will not send an further reports to the observer, until he reports 'Ready' or reports the opening rounds of fire for effect with the report 'Shot'.

Procedure When the Target is Not Identified

845. If the forward observer does not identify the target from the location sent by the observer he orders 'Cannot observe. Adjust fire'. The observer then carries out the adjustment procedure. If the observer has indicated that he requires fire for effect immediately, the term 'adjust fire' refers to the adjustment of the mean point of impact of the rounds. See Paragraph 850.

846. Should the observer anticipate he will have difficulty in observing the opening round of adjustment he may order any of the following:

a. *'Three Guns. Adjust Fire'*. In this case the artillery will fire single rounds simultaneously from three guns. Once the observer considers he no longer requires three guns, he should immediately order 'One gun, Adjust fire'.

b. *'Smoke' or 'WP'*. This is normally only ordered for the first round, the observer then ordering 'HE' for the remaining rounds.

847. The forward observer, if he can see the round(s), tries to identify the target. If, at any time during adjustment, he identifies the target, he reports to the observer 'Target identified'. The forward observer then takes over the mission and no further orders are passed between him and the observer until adjustment is completed (see Paragraph 843).

848. Unobserved round(s) may be reported by the observer Unobserved'. The forward observer should then decide which of the following courses to adopt:

a. Fire another round(s) at the same place.

b. Give a correction which is likely to give the observer a better chance of seeing the round(s).

c. Fire a round of smoke or WP. The observer himself may order smoke or WP (see Paragraph 846).

849. **Splash.** The forward observer will report 'Shot' followed by 'Splash' before the fall of each round as an aid to the observer, for example, 'Shot' — OVER . . . 'Splash' — OVER'. If the time of flight is short this may be in one transmission; for example, 'Shot' . . . 'Splash' — OVER.

Fire for Effect

850. The forward observer will bring down fire for effect onto the target at the time ordered by the observer, that is, the rounds will arrive at that time. The observer must report whether or not the fire is effective, for example, 'Fire effective . . .'. If the mean point of impact is not on the target or the target is a large area, the observer should order a correction. The forward observer should inform the observer when fire for effect has been completed by reporting 'Rounds complete'.

Repeat

851. During adjustment, or in fire for effect if it is required to fire another round or rounds at the same gun data, the order 'Repeat' is used.

Previously Recorded Targets

852. When a target has been previously recorded and the target number is known to the observer, for example, DF targets or On Call targets in a fire plan, fire can be brought down by using the normal procedure. Examples are as follows:

a. 'Fire Mission, Target ZT 1652, Direction 1270 (if adjustment is likely) 50 Infantry in open 100 x100, Fire for effect'. The number of rounds would be stated in SOPs.

b. 'Fire Mission, Target ZT 6542, Direction 1270. Machine gun firing. Fire for effect'.

Examples

853. In examples given in the following paragraphs the transmissions may be broken down into shorter and more convenient lengths. Abbreviated callsigns and abbreviated procedure have been used throughout. As a call for fire normally is a single call, callsigns have been omitted wherever possible.

854. **Example 1.** The target is not identified by the forward observer and the observer completes the mission. Examples are given of a correction, repetition and the use of smoke. The serial numbers show the order in which the transmissions are made:

Serial	*Observer Callsign Mike Zulu 3*	*Forward Observer Callsign Charlie Delta 12*	*Remarks*
(a)	(b)	(c)	(d)
1.	One Two — THIS IS Three — Fire mission — OVER.		
2.		One Two — Fire mission — OVER.	
3.	GRID 246 — 791 — Direction 1670 — OVER.		

(a)	(b)	(c)	(d)
4.		GRID 246 — 751 — Direction 1670 — OVER.	The forward observer repeats back the grid incorrectly.
5.	WRONG — GRID 246 — 791 — OVER.		
6.		WRONG — GRID 246 — 791 — OVER.	
7.	Six mortars in quarry 200 x 200 — For three minutes — OVER.		The observer wishes the target to be neutralized immediately, for three minutes.
8.		Six mortars in quarry 200 x 200 — For three minutes — OUT.	
9.		Three — THIS IS One Two — Cannot observe — Adjust fire — OVER.	
10.	Three — Cannot observe — Adjust fire — OUT.		
11.		Three — THIS IS One Two — Shot — OVER.	
12.	Three — Shot — OVER.		
13.		Splash — OVER.	
14.	Splash — OUT.		
15.	One Two — THIS IS Three — Unobserved — Smoke — OVER.		The observer does not see the round and orders smoke.
16.		One Two — Unobserved — Smoke — OUT.	
17.		Three — THIS IS One Two — Shot — — OVER.	
18.	Three — Shot — OVER.		
19.		Splash — OVER.	
20.	Splash — OUT.		
21.	One Two — THIS IS Three — HE — Right 200 — OVER.		The observer reverts to HE.
22.		One Two — HE — Right 200 — OUT.	

(a)	(b)	(c)	(d)
23.		Three — THIS IS One Two — Shot — OVER.	
24.	Three — Shot — OVER.		
25.		Splash — OVER.	
26.	Splash — OUT.		
27.	One Two — THIS IS Three — Add 400 — OVER.		
28.		One Two — SAY AGAIN — OVER.	The forward observer asks for a repetition.
29.	I SAY AGAIN — Add 400 — OVER.		
30.		Add 400 — OUT.	
31.		Three — THIS IS One Two — Shot — OVER.	
32.	Three — Shot — OVER.		
33.		Splash — OVER.	
34.	Splash — OUT.		
35.	One Two — THIS IS Three — Drop 200 — OVER.		
36.		One Two — Drop 200 — OUT.	
37.		Three — THIS IS One Two — Shot — OVER.	
38.	Three — Shot — OVER.		
39.		Splash — OVER.	
40.	Splash — OUT.		
41.	One Two — THIS IS Three — Add 100 — OVER.		
42.		One Two — Add 100 — OUT.	
43.		Three — THIS IS One Two — Shot — OVER.	
44.	Three — Shot — OVER.		
45.		Splash — OVER.	

(a)	(b)	(c)	(d)
46.	Splash — OUT.		
47.	One Two — THIS IS Three — Drop 50 — Target — OVER.		
48.		One Two — Drop 50 — Target — OUT.	The forward observer now orders fire for effect on the artillery net.
49.		Three — THIS IS One Two — Shot — OVER.	
50.	Three — Shot — OVER.		
51.		Splash — OVER.	
52.	Splash — OUT.		
53.		Three — THIS IS One Two — Rounds Complete — OVER.	The forward observer reports fire for effect has been completed.
54.	Three — Rounds complete — OUT.		
55.	One Two — THIS IS Three — Fire effective — End of mission — OVER.		
56.		One Two — Fire effective — End of mission — OUT.	The forward observer terminates the mission and records the target if considered necessary.

855. **Example 2.** The target is not identified by the forward observer and the observer completes the mission. Examples are given of the observer using three guns in adjustment and repetition of part of an order. The serial numbers show the order in which the transmissions are made:

Serial	*Observer Callsign Mike Zulu 3*	*Forward Observer Callsign Charlie Delta 12*	*Remarks*
(a)	(b)	(c)	(d)
1.	One Two — THIS IS Three — Fire Mission — OVER.		
2.		One Two — Fire Mission — OVER.	
3.	Cross roads — GRID 2684 — Direction 3670 — Left 200 Drop 400 — OVER.		

(a)	(b)	(c)	(d)
4.		SAY AGAIN Direction — OVER.	Part of the transmission is missed. Only the part missed is repeated.
5.	I SAY AGAIN — Direction 3670 — OVER.		
6.		Cross roads — GRID 2684 — Direction 3670 — Left 200 — Drop 400 — OVER.	
7.	Anti-tank guns in wood 100 x 100 — Three minutes at 1100 hours — OVER.		The observer wishes the target neutralized for three minutes at 1100 hours.
8.		Anti-tank guns in wood 100 x 100 — Three minutes at 1100 hours — OUT.	
9.		Three — THIS IS One Two — Cannot observe — Adjust fire — OVER.	The forward observer cannot identify the target.
10.	Three — Cannot observe — Three guns — Adjust fire — OVER.		The observer wishes to see a round from three guns.
11.		Three guns — Adjust fire — OUT.	
12.		Three — THIS IS One Two — Shot — Splash — OVER.	The time of flight is short.
13.	Three — Shot — Splash — OUT.		
14.	One Two — THIS IS Three — One Gun — Adjust fire — Right 150 — Drop 400 — OVER.		The observer reverts to single gun adjustment.
15.		One Two — One gun — Adjust fire — Right 150 — Drop 400 — OUT.	
16.		Three — THIS IS One Two — Shot — Splash — OVER.	
17.	Three — Shot — Splash — OUT.		
18.	One Two — THIS IS Three — Add 200 — OVER.		

(a)	(b)	(c)	(d)
19.		One Two — Add 200 — OUT.	
20.		Three — THIS IS One Two — Shot — Splash — OVER.	
21.	Three — Shot — Splash — OUT.		
22.	One Two — THIS IS Three — Drop 100 — OVER.		
23.		One Two — Drop 100 — OUT.	
24.		Three — THIS IS One Two — Shot — Splash — OVER.	
25.	Three — Shot — Splash — OUT.		
26.	One Two — THIS IS Three — Add 50 — Target — OVER.	No reply.	As no reply is heard, the order is repeated preceded by the proword I SAY AGAIN.
27.	One Two — THIS IS Three — I SAY AGAIN — Add 50 — Target — OVER.		
28.		One Two — Add 50 — Target — OUT.	
29.		Three — THIS IS One Two — Shot — Splash — OVER.	The fire for effect is fired to arrive on the target at 1100 hours.
30.	Three — Shot — Splash — OUT.		
31.	One Two — THIS IS Three — Right 50 — Repeat — OVER.		The fire is not effective. The observer orders a correction before fire for effect is completed.
32.		One Two — Right 50 — Repeat — OUT.	
33.		Three — THIS IS One Two — Shot — Splash — OVER.	
34.	Three — Shot — Splash — OUT.		
35.			The mission continues.

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